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Journal of the AMERICAN MEDICAL WOMEN'S ASSOCIATION

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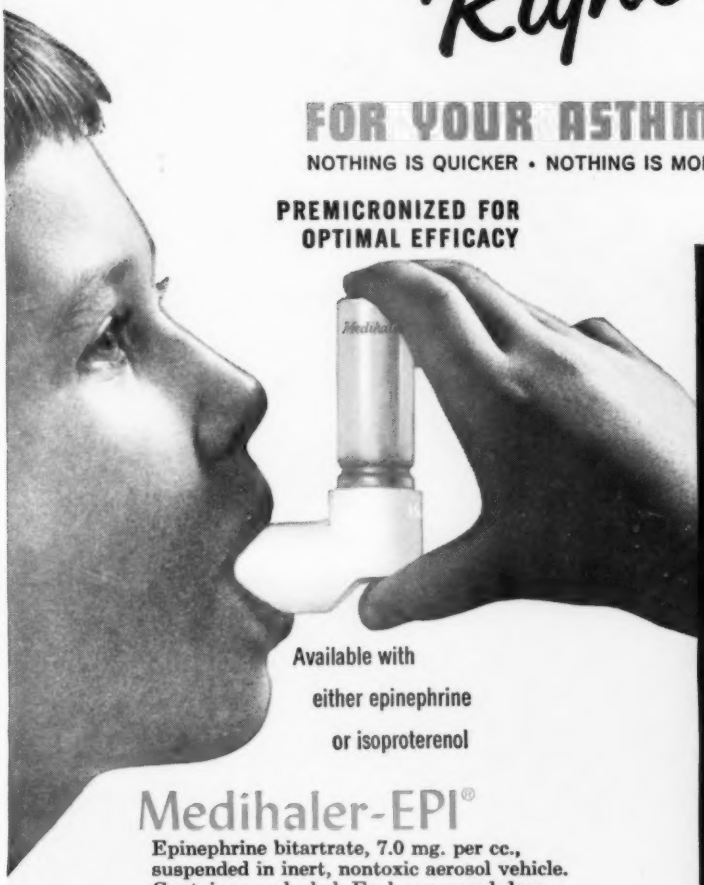

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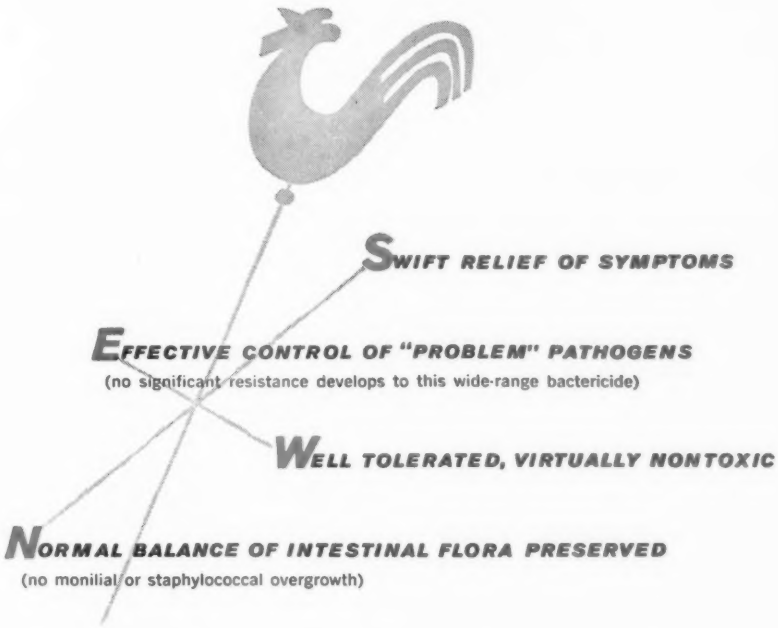
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References: 1. J. J. McDonough and N. Mulla, to be published. 2. Reports on file, Roche Laboratories. 3. R. C. V. Robinson and L. E. Harmon, *Antibiotics Annual 1958-1959*, New York, Medical Encyclopedia, Inc., 1959.

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Journal of the AMERICAN MEDICAL WOMEN'S ASSOCIATION

Volume 15 | February, 1960 | Number 2

SPECIAL ISSUE FOR JUNIORS

This issue, including the advantages of AMWA junior membership, the development of a physician, statistics on medical practice of women graduates of a medical school, and the experience of clerkship in a foreign country, was compiled with the thought that it might be of especial significance to women medical students. It is also believed that the complete review and research article on uremia has excellent value for students as well as physicians.

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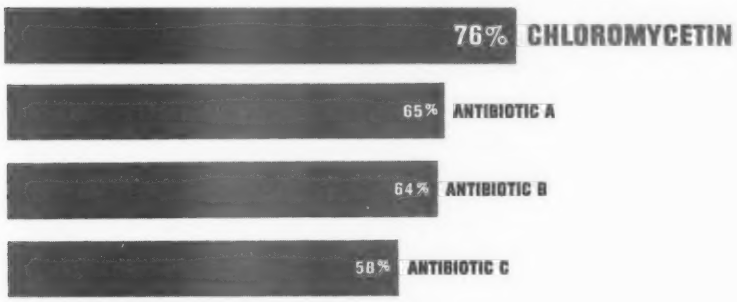

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References: 1. Lichtman, A. L.: Scientific Exhibit, meeting of the International College of Surgeons, Miami Beach, Fla., Jan. 4-7, 1959. 2. Mullin, W. G., and Epifano, Leonard: *Am. Pract. & Digest Treat.* 10:1743, Oct., 1959. 3. Ganz, S. E.: *J. Indiana M. A.* 52:1134, July, 1959. 4. DeNyse, D. L.: *M. Times* 87:1512, Nov., 1959. 5. Shanaphy, J. F.: *Current Therap. Res.* 1:59, Oct., 1959. 6. Stough, A. R.: *J. Oklahoma M. A.* 52:575, Sept., 1959.

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References:

1. Parker, M. L.: Investigator's Report, Dec. 24, 1958. 2. Rakoff, A. E.: Symposium on Enovid, Chicago, Searle Research Laboratories, 1959, pp. 54-57. 3. Chalmers, J. A.: Proc. Roy. Soc. Med. 52:516 (July) 1959. 4. Hester, L. L., Jr., in Conn, H. F. (editor): Current Therapy — 1959, Philadelphia, W. B. Saunders Company, 1959, pp. 621-623. 5. Maeder, E. C.: Journal-Lancet 79:364 (Aug.) 1959. 6. Schneeberg, N. G.; Perczek, L.; Nodine, J. H., and Perloff, W. H.: J.A.M.A.161:1062 (July 14) 1956. 7. Napp, E. E.; Goldfarb, A. F., and Massell, G.: West. J. Surg. 64:492 (Sept.) 1956. 8. Sutton, W. K., and Brown, D. B.: Brit. M. J. 2:1450 (Dec. 13) 1958. 9. Council on Drugs: New and Nonofficial Drugs 1959, Philadelphia, J. B. Lippincott Company, 1959, p. 520.

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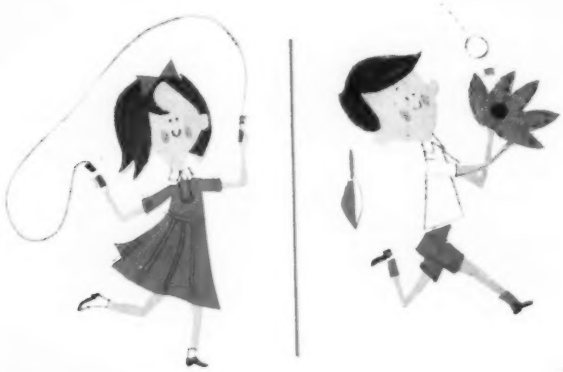

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1. Projection from Vital Statistics, U.S. Government Dept. HEW, Vol. 48, No. 14, 1958, p. 398.
2. Modell, W.: Drugs of Choice 1958-1959, St. Louis, C. V. Mosby Company, 1958, p. 347.

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for the chronically fatigued...

Ritalin® hydrochloride
(methyl-phenidylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor – with little or no effect on appetite or blood pressure.

CIBA SUMMIT, N. J.

brighten the day

for the menopausal patient . . .

Ritalin® hydrochloride
(methyl-phenidylacetate hydrochloride CIBA)

. . . **mild antidepressant,** unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

CIBA SUMMIT, N. J.

brighten the day

for depressed older patients . . .

Ritalin® hydrochloride
(methyl-phenidylacetate hydrochloride CIBA)

. . . **mild antidepressant,** unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

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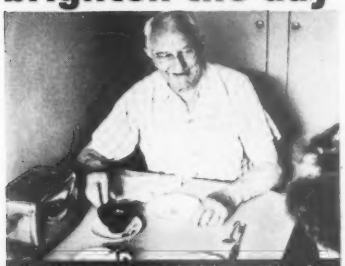
brighten the day



for the confused older patient . .

Ritalin® hydrochloride
(methyl-phenidylacetate hydrochloride CIBA)

. . . **mild antidepressant,** unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

CIBA SUMMIT, N. J.

brighten the day

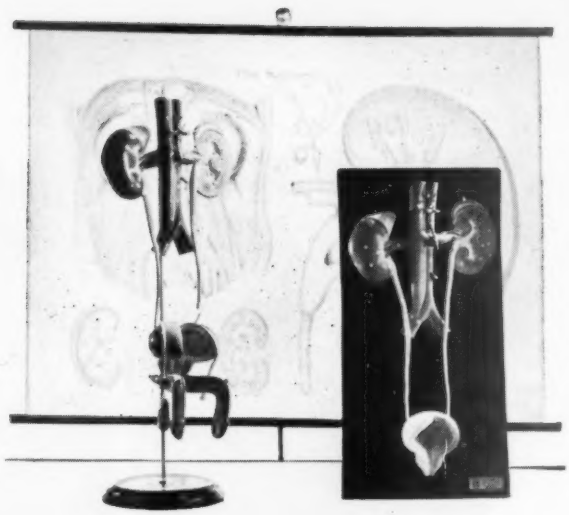
for the postoperative patient . .

Ritalin® hydrochloride
(methyl-phenidylacetate hydrochloride CIBA)

. . . **mild antidepressant,** unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

CIBA SUMMIT, N. J.

8/2507 MK



in genitourinary tract infections

6,800,000

courses of treatment* and still negligible development of bacterial resistance with

FURADANTIN®

brand of nitrofurantoin

"...may be unique as a wide-spectrum antimicrobial agent that...does not invoke resistant mutants."

Waisbren, B. A., and Crowley, W.: A.M.A. Arch. Int. M. 95:653, 1955.

Available as Tablets, 50 and 100 mg.; Oral Suspension, 25 mg. per 5 cc. tsp.

*Conservative estimate based on the clinical use of FURADANTIN Tablets and Oral Suspension since 1953.

Illustration through courtesy of Clay-Adams, Inc., New York

NITROFURANS—a *unique* class of antimicrobials—neither antibiotics nor sulfonamides

EATON LABORATORIES, NORWICH, NEW YORK

announcing a new class of drug / *the first analgomylaxant*

analexin™

phenyramidol HCl

a single chemical that is both a general non-narcotic analgesic and an effective muscle relaxant

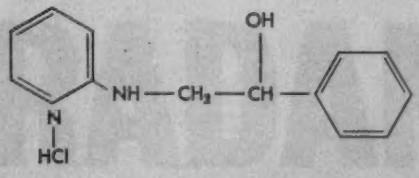
announcing a new class of drug

analexin

therefore... in pain... where pain makes tension and tension makes pain... analexin stops both effectively

Analexin is a new synthetic chemical (phenyramidol hydrochloride) that inherently possesses within one molecular structure two different pharmacologic actions: (1) *general analgesia,* by raising the pain threshold and thus decreasing the perception of pain, and (2) *muscle relaxation,* by selectively depressing subcortical, brain stem and spinal polysynaptic transmission (interneuronal blockade), abolishing abnormal muscle tone without impairing normal neuromuscular function.[1,2]

Although the analgesic potency of one tablet is clinically equivalent to one grain of codeine, Analexin is not narcotic or narcotic related. It is not habituating and tolerance to the drug has not been noted. Muscle relaxant action is comparable to the most potent muscle relaxants available for oral use. *The total effect is "analgomylaxation"—a new advance for the relief of pain.*



The full chemical name for phenyramidol is 2-(βhydroxyphenethylamino)-pyridine hydrochloride. It is unrelated to any currently available analgesic or muscle relaxant compound.[3,4]

Meisler

analexin provides effective relief of the total pain experience...

The end result of pain, regardless of its origin, is discomfort or suffering paralleled by muscle tension. Thus muscle tension may play a fundamental role in the total pain experience even though it does not initiate the pain. Employment of a single agent that produces two distinct but associated physiologic responses has obvious advantages, for relief of the total pain experience is better accomplished by the integrated action of phenyramidol which acts on both pain centers and muscle to produce analgesia and relieve muscle tension simultaneously.

with remarkably few side effects

Side effects such as sedation, euphoria, mental confusion and depression, sometimes associated with interneuronal blocking and certain analgesic agents have not been noted with Analexin. Incidence of reactions is low and those reactions that occasionally occur (such as gastric irritation and pruritus) are of a mild and transient nature and do not limit therapy.[5]

Meisler

announcing a new class of drug

analexin

results with analexin in clinical trials

Batterman, Grossman and Mouratoff[5] compared Analexin with aspirin, sodium salicylate and a placebo in a series of 195 patients with various painful conditions. The authors concluded:

"Not only is satisfactory relief of painful states achieved in the majority of patients regardless of etiology and duration of pain, but there is also no evidence suggestive of cumulative toxicity. Furthermore, in contrast to codeine and meperidine, the likelihood of untoward reactions occurring in ambulant patients is not high. This is a decided advantage since the control of pain in the ambulant patient with chronic pain is a major clinical problem."

"Phenyramidol (Analexin), with therapeutic doses is not only safe for chronic administration, but also to date we have noted no adverse effect upon the cardiovascular, gastrointestinal, respiratory, kidney, liver or central nervous systems."

Wainer[6] reported a series of 200 cases treated with phenyramidol for various painful conditions. In fifty of these patients who had dysmenorrhea, he saw excellent results in 40, good results in 5 and poor results in 5. Further examination in 4 cases not responding revealed presence of organic pathology. A second group of 50 cases with headache and associated premenstrual tension responded with over-all excellent results. Wainer also reports the use of phenyramidol to replace codeine for postpartum pain and describes 100 cases wherein a combination of phenyramidol with aluminum aspirin (Analexin-AF) successfully replaced aspirin and codeine therapy.

Reisler

more results with analexin in clinical trials

In another series of dysmenorrhea cases, Bader[7] compiled data on 20 employees of a telephone company who required ½ to 2 days off from work every month regardless of prior therapy employed. Satisfactory results were achieved in 15 out of 20 and a fair response in the remaining five. All were able to remain on the job although relief was not complete in the latter cases.

Bealer[8] treated 32 patients with phenyramidol mostly for musculoskeletal disorders and had good or very good results in 15, fair results in 14 and poor or inconclusive results in 2 patients. Cohen[9] used phenyramidol together with aspirin in 15 patients with such conditions as sciatic pain, osteoarthritis, anterior chest wall syndrome, etc. and got outstanding relief in 80 per cent. Gilbert[10] reported that 15 patients with nonspecific headache had excellent relief in a matter of minutes with phenyramidol, and in 8 cases of dry socket pain Bruno[11] reports immediate relief in six cases and good results later in the other two after sockets were curetted under local anesthesia. Stern[12] reported on 40 ambulatory cases with a variety of painful conditions and saw good relief in 32 patients and poor in 8. Results were best in acute sacroiliac pain, myositis, muscle spasm, fractures, pleurisy and neuritis. Ten of 13 patients with osteoarthritis responded very well and are continuing on phenyramidol therapy.

Neisler

announcing a new class of drug

analexin

analexin *(phenyramidol)*

for relief of pain *and muscle tension* in:

low back pain
sprains and strains
myalgia
glass arm
wry neck
osteoarthritis
dysmenorrhea
tension headache
gout
postpartum pain
epigastric distress
(pylorospasms, gastritis, duodenal ulcer, cholecystitis)
genitourinary conditions
(premenstrual cramping or tension)
abdominal distress
(flatulence, colic)
toothache and dry socket pain

analexin-AF *(phenyramidol with aluminum aspirin)*

for relief of pain and muscle tension also involving inflammatory processes and/or fever, as in:

arthritis
arthralgia
bursitis
tendinitis
myalgia of strain and tear
pre- and postoperative toothache

dosage:

analexin: for relieving pain and/or muscle tension, one or two tablets every 4 hours. In dysmenorrhea, two tablets initially then one tablet every 2 to 4 hours as needed.

analexin-AF: two tablets every 4 hours or as required.

supply:

analexin tablets—Each tablet contains 200 mg. of phenyramidol HCl. Bottles of 100 tablets.

analexin-AF tablets — Each tablet contains 100 mg. of phenyramidol HCl and 300 mg. of aluminum aspirin. Bottles of 100 tablets.

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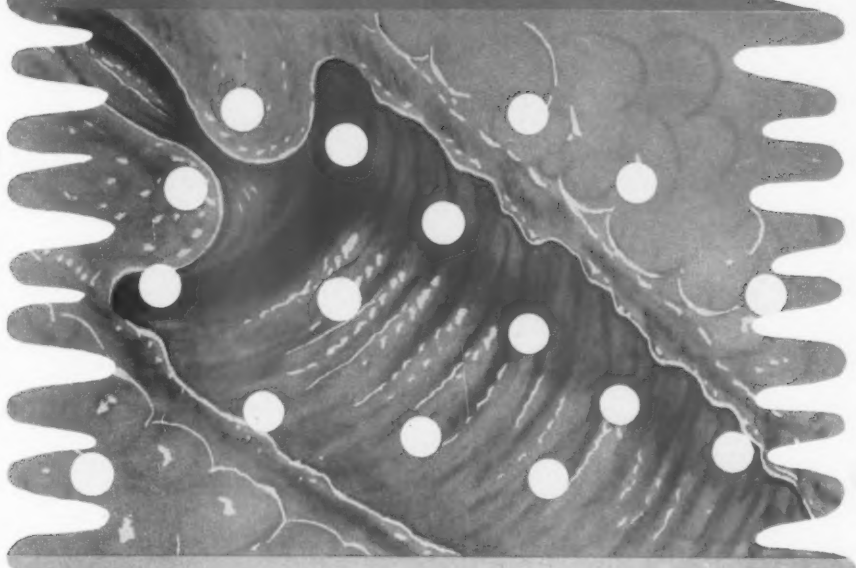
Clinical Reports cited above are in the files of the Medical Department, Irwin, Neisler & Co.

Irwin, Neisler & Co. Decatur, Illinois

effective cleansing



MASSENGILL® POWDER

the buffered acid vaginal douche with low surface tension

Surface tension of Massengill Powder in standard solution is 50 dynes/cm., compared to vinegar at 72 dynes/cm. This low surface tension enables Massengill Powder to penetrate and cleanse the folds of the vaginal mucosa. It also makes cell walls of infecting organisms more susceptible to therapy.

Massengill Powder is mildly astringent and soothing to inflamed tissue. Patients like its clean, refreshing odor.

Valuable adjunct in management of monilia, trichomonas, staphylococcus and streptococcus vaginal infections.

contains: Ammonium Alum, Boric Acid, Phenol, Menthol, Berberine, Thymol, Eucalyptol, and Methyl Salicylate.

THE S. E. MASSENGILL COMPANY

Bristol, Tennessee • New York • Kansas City • San Francisco

CRITICAL pH ZONE

The normal vagina has a pH of 3 to 4.5, but an infection usually causes the pH to rise. An alkaline mucosa neutralizes a simple, unbuffered acid douche like vinegar within 30 minutes.

In contrast, the *buffered* acid douche solution of Massengill Powder (pH 3.5 - 4.5) resists neutralizing. The normal, low pH is maintained for 4 to 6 hours in ambulant patients and as long as 24 hours in recumbent patients. This low pH inhibits the propagation of monilia, trichomonas vaginalis, and pathogenic bacteria, but permits growth of the beneficial Döderlein bacillus.

MASSENGILL® POWDER

the buffered acid vaginal douche with low surface tension

THE S. E. MASSENGILL COMPANY

Bristol, Tennessee • New York • Kansas City • San Francisco

the decorative jar makes a therapeutic difference

The FILIBON jar is a handsome and handy reminder for everyday prenatal nutritional support. You can be sure she will be reminded of her FILIBON-a-day... and that the up-to-the-minute formula covers nutritional defenses throughout pregnancy.

FILIBON provides ferrous fumarate, an iron well-tolerated by even the most easily upset patients. Each small, dry-filled capsule also includes vitamin K and AUTRINIC® Intrinsic Factor Concentrate that enhances, never inhibits, B_{12} absorption. For complete formula see Physicians' Desk Reference, page 697.

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y. Lederle

Phosphorus-free FILIBON® Prenatal Capsules Lederle

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(Continued on page 134)

NIAMID

the mood brightener

makes the cancer patient more comfortable

- reduces impact of pain
- decreases narcotic requirements
- increases appetite
- improves mental outlook

NIAMID lessens the need for narcotics in the depressed cancer patient and appears to potentiate pain-relieving agents. As pain is reduced and mental outlook improves, apprehension and depression are replaced by a brighter and more alert attitude, and appetite returns. The family, too, is cheered by the improvement in the patient's condition. With NIAMID therapy, patient care becomes noticeably less demanding.

Supply: NIAMID (brand of nialamide) is available as 25 mg. (pink) and 100 mg. (orange) scored tablets.

Complete references and a Professional Information Booklet giving detailed information on NIAMID are available on request from the Medical Department, Pfizer Laboratories, Division, Chas. Pfizer & Co., Inc., Brooklyn 6, New York

NIAMID®

the mood brightener in cancer

Pfizer

Science for the world's well-being™

stop as well as prevent nausea and vomiting

Tigan

now in oral, parenteral, and suppository forms

effective but not "side effective"

Tigan blocks emetic impulses at the chemoreceptor trigger zone (CTZ),[1] a medullary structure activating the vomiting center. While Tigan shares with the phenothiazines the mode of antiemetic action, this is their only similarity.[1] In extensive clinical studies[2-14] Tigan, unsurpassed in specificity, has exhibited a virtually complete absence of side effects. Tigan has demonstrated no sedative or tranquilizing properties, no hypotensive or supramedullary effects, no extrapyramidal tract stimulation or hepatic toxicity.[2-14]

no special precautions—
no known contraindications

in nausea/vomiting of gastrointestinal disorders

Complete or moderate relief in 78 per cent of acute or chronic gastroenteritis patients;[13] "We did not find a single toxic reaction . . . no side effects, such as sedation, skin rash . . . no changes in pulse, respiration, or . . . blood pressure."[13]

in nausea/vomiting of pregnancy

No evidence of sedation or other side effects[12] observed in a series of patients of whom 94 per cent became asymptomatic on Tigan. On other antiemetic medication, several had failed to respond or had complained of drowsiness.[12]

in nausea/vomiting of radiation sickness

Protected with Tigan "... not one patient had to discontinue [deep radiation] treatments. . . ."[5]

in nausea/vomiting of drug administration

"... large intermittent dose[s] of [nitrogen mustard and other drug] therapy could be given without the associated nausea and vomiting that we had seen before."[7]

Tigan

specific
antiemetic
antinauseant

no sedative properties
no tranquilizer side effects

Suggested uses: Both prophylactic and therapeutic control of nausea and vomiting associated with pregnancy, travel sickness, gastrointestinal disorders, operative procedures, carcinomatoses, toxicoses, other underlying disease processes, drug administration and radiation therapy.

Dosage: Adults — 1 or 2 capsules, orally, 2 cc intramuscularly, q.i.d. or 1 suppository, q.i.d. For children's dosage, consult literature.

In nausea and vomiting of pregnancy — Satisfactory control is usually achieved with an initial dose of two capsules immediately upon awakening. If possible, the patient should remain in bed for one-half to one hour following this dose. When nausea and vomiting are not confined to the morning hours, supplemental doses of one or two capsules should be given throughout the day at intervals of three to four hours.

How Supplied: Tigan capsules, 100 mg, blue and white — bottles of 100 and 500. Tigan ampuls, 2 cc (100 mg/cc)— boxes of 6 and 25. Tigan Pediatric Suppositories, 200 mg, boxes of 6.

TIGAN® Hydrochloride—
4-(2-dimethylaminoethoxy)-
N-(3,4,5-trimethoxybenzoyl)
benzylamine hydrochloride
ROCHE®

ROCHE
LABORATORIES
Division of
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transition without tears

Milprem promptly relieves emotional distress with lasting control of physical symptoms

Milprem®

Miltown®+conjugated estrogens (equine)

Supplied in two potencies for dosage flexibility:

MILPREM-400, each coated pink tablet contains 400 mg. Miltown (meprobamate) and 0.4 mg. conjugated estrogens (equine).

MILPREM-200, each coated old-rose tablet contains 200 mg. Miltown and 0.4 mg. conjugated estrogens (equine).

Both potencies in bottles of 60.

Literature and samples on request.

In minutes, Milprem starts to ease anxiety and depression. It relieves insomnia, relaxes tense muscles; alleviates low back pain and tension headache. As the patient continues on Milprem, the replacement of estrogens checks hot flushes and other physical symptoms.

Easy dosage schedule: One Milprem tablet t.i.d. in 21-day courses with one-week rest periods; during the rest periods, Miltown alone can sustain the patient.

WALLACE LABORATORIES, *New Brunswick, N. J.*

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Patients are happier when doctors choose Fleet® Enema

They are free of the visceral discomfort and prolonged embarrassment so often caused by older enema methods. The ready-to-use Fleet Enema squeeze bottle also does away with troublesome preparation and cleanup procedures. Insertion is made easy and safe with the pre-lubricated, anatomically correct 2-inch rectal tube. Most important—Fleet Enema provides a quick yet thorough cleansing action with only 4½ fl.oz. of precisely formulated, standardized solution.[1]

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1. Rosenfield, H. H., et al.: Obst. & Gynec. 11:222, 1958. 2. Heilman, L. D.: To be published.

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(Continued on page 140)

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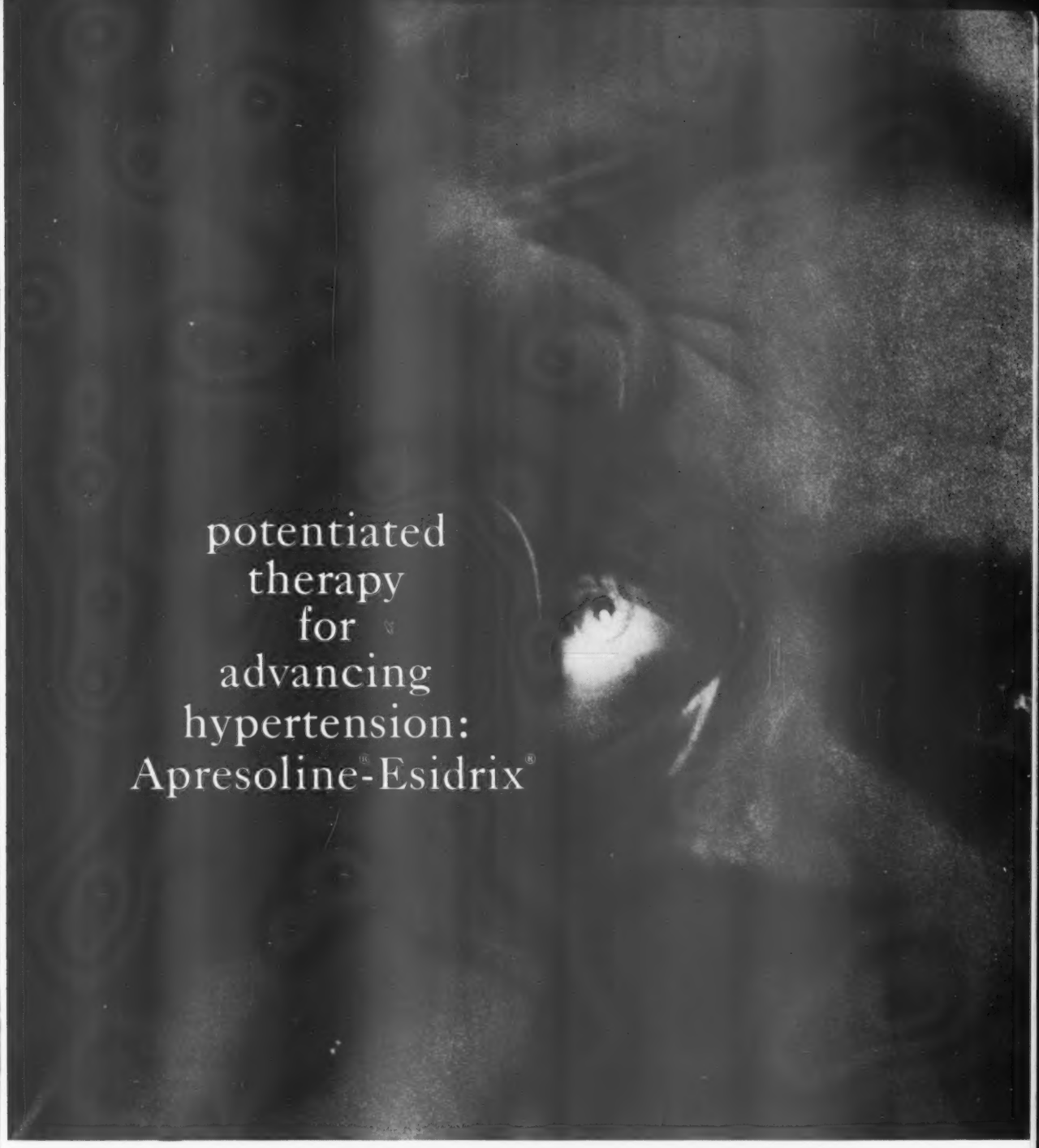

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(Continued on page 187)

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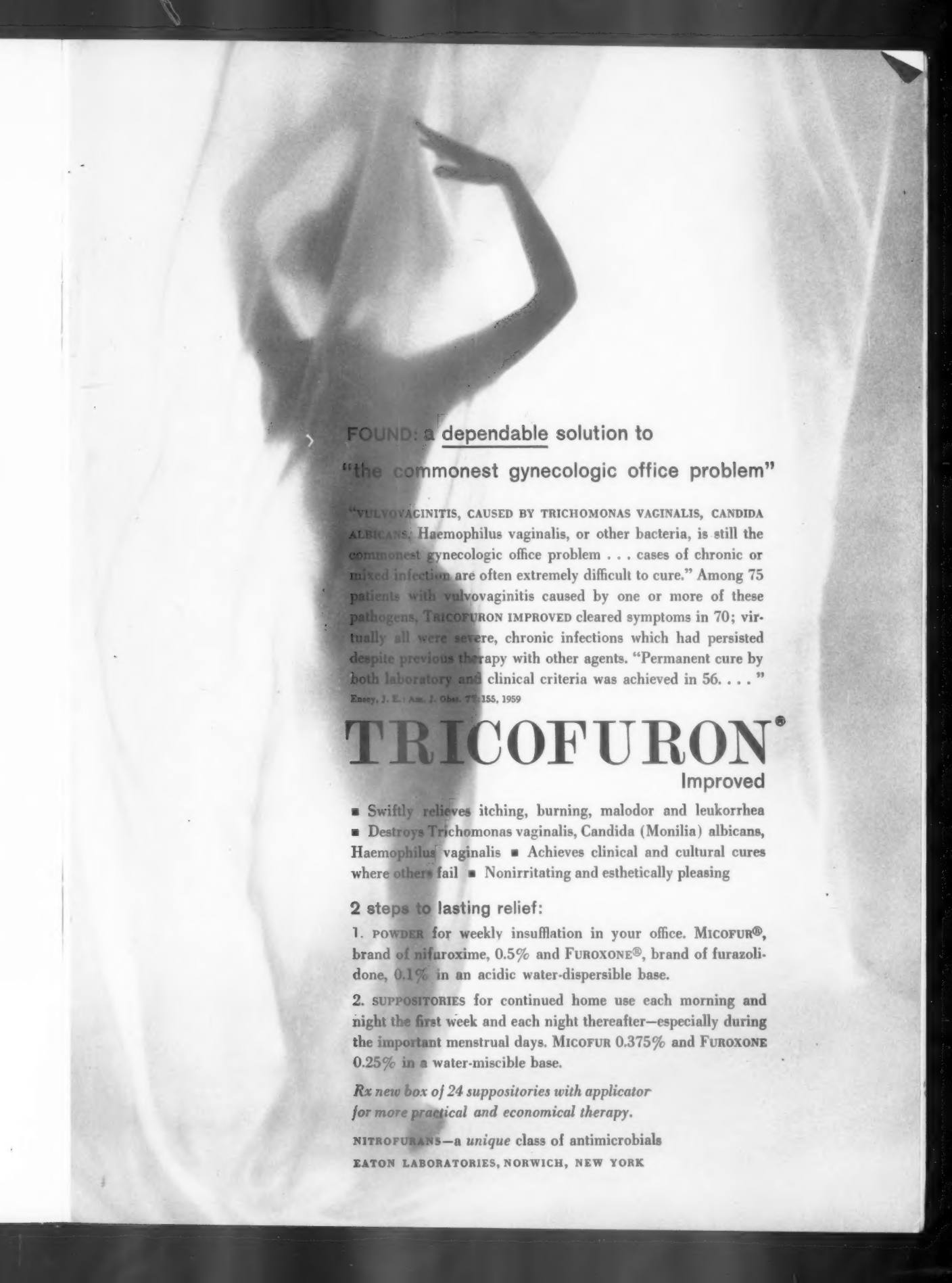

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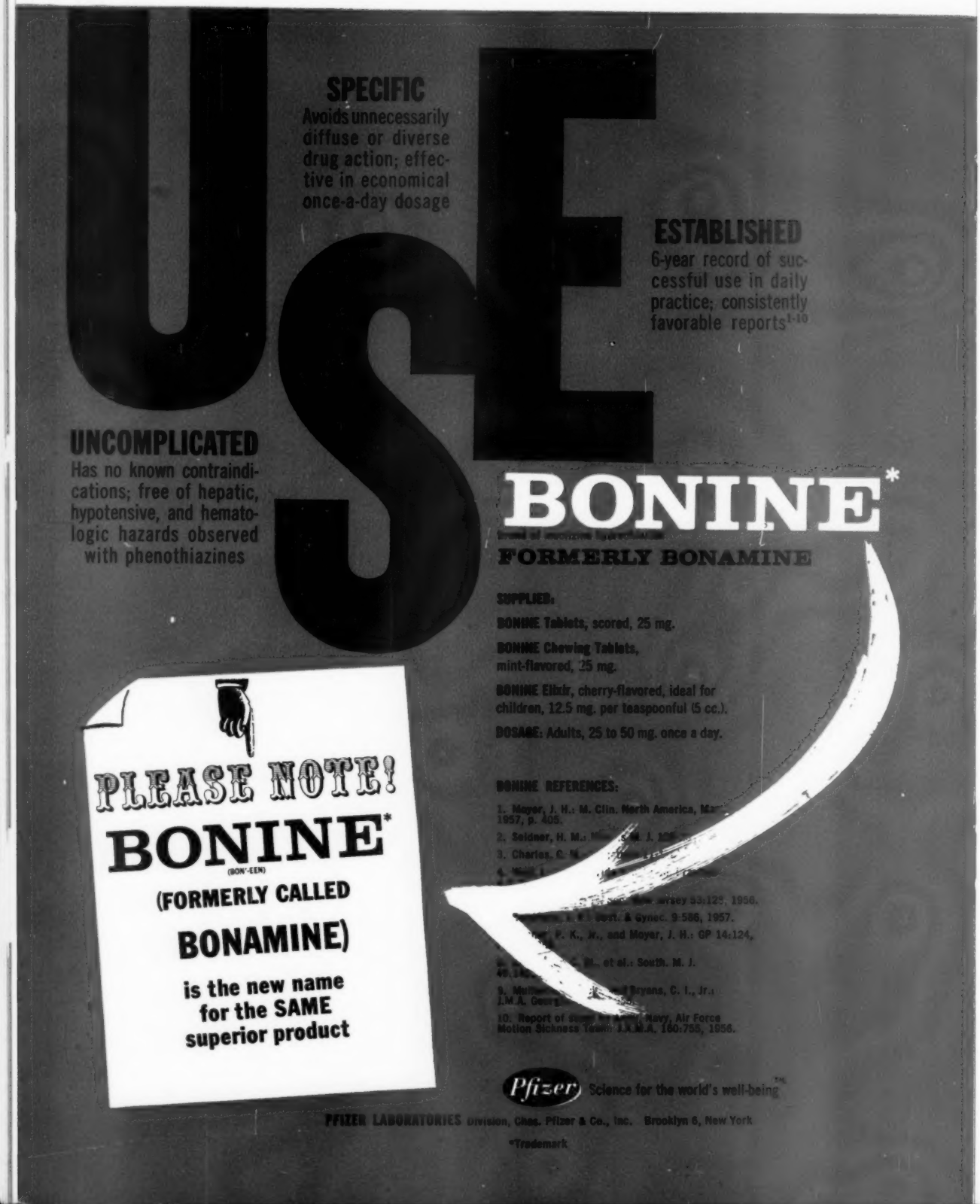
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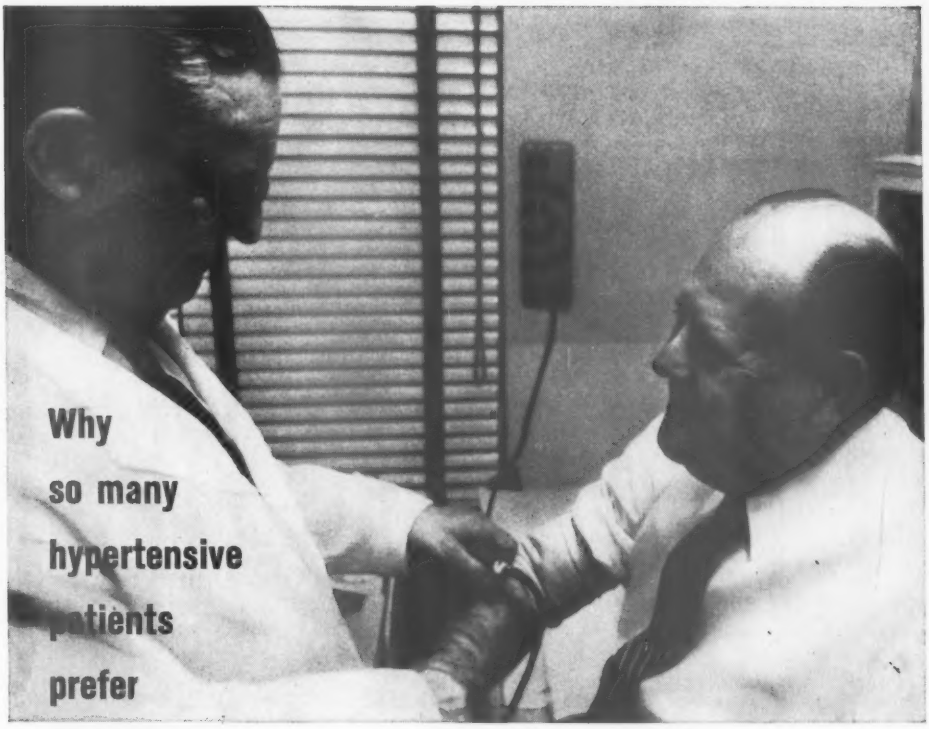

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Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

Volume 15 FEBRUARY, 1960 Number 2

EDITORIAL

The Whys and Wherefores of the AMWA

The American Medical Women's Association was organized in Chicago in 1915 by a small group of women physicians who believed that an organized group could be more effective than an individual or a loosely joined group. That their thinking was correct has been repeatedly demonstrated not only for the AMWA but for numerous other groups of physicians. One of the striking examples of the effectiveness of organization is the American Academy of General Practice. This young organization has changed the general practitioners of our medical system from dissatisfield individuals—who often felt that they worked extremely hard at the practice of medicine and had too little to say about medical policies—into an extremely strong and effective group whose opinions and decisions are to be seriously considered whenever medical policies are being determined. The Academy's plan of postgraduate refresher courses, along with numerous other ideas initiated by this group, has certainly done much to keep the standard of medical practice on a high plane.

These questions are frequently asked about the AMWA: Just what is the AMWA and what does it do? Is it not a group of women medics who want to wave the suffragette flag? Why should women physicians have a separate organization? Does this not further separate or segregate them from their male colleagues? Why have a separate organization with additional meetings when women physicians are accepted in all medical societies and there is already a surfeit of meetings? Why try to compete with the AMA and other medical societies? Why have a separate journal? What does membership offer? What does junior membership offer? What are the obligations of a junior member? The answers are not very difficult when one understands the motivating forces behind the AMWA.

The purposes of the AMWA are: to further the art and science of medicine; to promote interests common to women physicians and the public; to aid and encourage premedical, medical, and postgraduate students; to foster medical relief projects; and to cooperate with other organizations having comparable interests.

The Association believes that women who have had the opportunity of obtaining a medical education have a very special contribution to make in certain fields of medicine because they are both women and physicians. No one will deny that there are certain basic differences, both physical and emotional, between the sexes, and that the woman as a potential or actual mother has instinctive reactions to the family and family life that differ from those of the man. It has ever been and ever will be so. It follows logically that the woman physician has a natural understanding of the problems of women and particularly of employed women.

In our changing economic system, it seems apparent that the number of women employed outside the home will continue to increase. Along with this there will also be an

increase in the number of women involved in solving the problems of maintaining a stable home and of doubling as a competent wife, mother, and breadwinner. Industry fully recognizes the relationship of the worker's productivity to the stability of the home environment. Absenteeism is much greater among employed women than men, particularly in the lower income brackets where the employed woman cannot afford to employ help for her domestic responsibilities and where the full care of the home and its occupants falls on her shoulders. Here, then, is just one field where women physicians should make an all-out effort to contribute their know-how to the solution of these problems. This is certainly "furthering the art and science of medicine and promoting interests common to women physicians and the public."

The AMWA is proud of the women who practice medicine. It wants to keep the fine quality of medical practice that has developed in this, our United States. It wants to encourage women who are well qualified to study medicine because the future of medicine depends upon the quality of the medical students of today. Each member of the AMWA stands ready to give of her time and counsel in advising and guiding medical students. The Association maintains a scholarship fund for women medical students needing financial assistance. A preceptorship program is now in the initial stage of its development.

It was with the purpose of acquainting women medical students with the activities of the AMWA that junior membership and junior branches were created. Junior membership is granted to any woman medical student in the four undergraduate years in an accredited medical school upon submission of a completed application. There are no dues. THE JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION is sent to the junior member with the compliments and best wishes of the Association membership. A junior branch can be formed in any medical school having three or more women medical students. The junior branch has a sponsor who is a member of the AMWA and who serves to guide and counsel the students and to help in any way possible in arranging programs and contacts between the students and the practicing physicians in the area. The advantages of being organized into a branch are that the national office then has a definite way of contacting all students through the officers, and that by having meetings much valuable information is passed on from year to year within the branch.

The junior branches have many different types of meetings. Some are purely social, giving the students an opportunity to get to know one another or to meet practicing women physicians. Some branches have a meeting to welcome new students into the school or to discuss job opportunities for part-time or summer work. An inspection tour of several types of physicians' offices has been of great interest to some, while others have enjoyed a meeting where medical specialties and postgraduate training opportunities have been discussed. Some junior groups prefer to meet with the senior branches. Others find it difficult to find time away from their studies for such meetings. These are only a few ideas that have already been tried by juniors.

The answer to the question as to why the Association should have a journal is obvious when just one issue has been examined. THE JOURNAL is the official organ of the Association and as such transmits to the membership a variety of information regarding the business of the Association, news items about women physicians, opportunities for jobs, prizes, and scholarships, and many other items of interest. It is unique. It does not intend to publish scientific articles in competition with the AMA or any other medical scientific journal. Most of the articles are written by women physicians so that other women physicians may know what their colleagues are doing. Other articles deal with matters of special interest to women physicians. Both THE JOURNAL and the AMWA are special and supplementary to the regular medical journals and associations. They are the "whipped cream" on the dessert.

The AMWA has a very definite place in the life of every woman physician. It is the only nationally organized group of women physicians in the country and as such speaks for all women physicians. It is the only contact with women physicians as a group which is available to other organized groups or individuals. It represents and speaks for *you*. If this is important to you, then you must take your part as a participating member of the AMWA.

—Esther C. Marting, M.D.
Director of Junior
Membership, AMWA

Recent Concepts of Diagnosis, Therapy, and Research in Uremia

Alex L. Finkle, M.D., Ph.D.

CONCOMITANT IMBALANCES of body fluid and electrolyte metabolism associated with retention of nitrogenous catabolites and often anemia, all reflecting "loss of renal reserve," constitute uremia.[1] Many types of pathology, including congenital (for example, polycystic disease), inflammatory (for example, glomerulonephritis), degenerative (for example, nephrosclerosis), and neoplastic (for example, distal ureteral obstruction secondary to prostatic hypertrophy, cancer of the bladder, or locally extending cervical cancer), may underlie the development of uremia. The kidneys need not be primarily affected; systemic disorders involving intractable vomiting or diarrhea may culminate in prerenal azotemia.[2-4] In this latter situation, anatomic damage of the kidney is often lacking; functional depression of the kidneys is probably completely reversible.[5,6] Hotchkiss has itemized prerenal, renal, and postrenal causes for uremia.[7]

A considerable amount of renal parenchyma may be rendered nonfunctioning before clinical and laboratory features of uremia become clearly demonstrable.[2,8-10]

Elevation of blood urea nitrogen is but an index, not the cause of uremia. Experimentally, animals and human subjects have been fed large doses of urea for protracted periods without ill-effect.[11]

Diuresis follows exogenous provision of urea, leading to mobilization of much extracellular fluid. In studies reported by Mudge, Foulks, and Gilman,[12] 50 per cent urea in saline solution was rapidly administered intravenously to dogs, producing serum levels up to 350 milliosmol (mOsm.) per liter, while urine flow rose to as high as 35 cc. per minute. Smith points out that urea clearance in man varies with the filtration rate but is independent of plasma urea concentration.[5]

The biochemical derangements causative of or produced during uremia are unknown. The "toxin" may be a proteinlike complex of high molecular weight in that it cannot pass through the glomerular membrane.[13-16] Because substances of low molecular weight have been removed by extracorporeal hemodialysis,[17] the "toxins" of uremia have been postulated as possibly falling within that group.[7,13] In either case it remains unknown whether the noxious agents exist prior to the development of renal failure or form during the period of impaired renal function. Similarly unknown are biochemical differences, if any, between "acute" and "chronic" uremia.

No substance available to date is capable of inducing per se the complete clinical state known as uremia. No correlation can be made between symptom severity and elevated serum levels of urea nitrogen, phenol, guanidine, and creatinine in uremia.[18-20]

CLINICAL DIAGNOSIS

Since the clinical manifestations of uremia are legion, no purpose is served by citing a list here. Bradley [21] has itemized these features, common amongst which are edema (particularly in patients with obstructive uropathy or heart failure), gastrointestinal bleeding, nausea and vomiting, hyperpnea (due usually to metabolic acidosis), and, in about one third of the cases, fibrinous pericarditis as a terminal event.[22] Convulsions occur in about 5 per cent of these patients and are most often a manifestation of hypertension.[21]

Clinical tests of renal function are subject to variable interpretations in relation to the type and stage of renal dysfunction under study.[23,24] In general, elevation of blood urea nitrogen and/or nonprotein nitrogen is utilized as prima facie evidence of renal insufficiency. Sunderman,[25] however, points out that disturbances of serum osmotic pressure rather than the elevation of serum nitrogen-

Dr. Finkle is Assistant Clinical Professor of Urology, Department of Surgery, Division of Urology, University of California School of Medicine, San Francisco.

ous levels are critically important. And, Haugen and Blegen,[26] as well as other writers,[27] emphasize that persistent elevation of plasma creatinine is far more reliable as an index of damaged renal parenchyma than blood urea nitrogen, particularly in estimating renal functional recovery. A new rapid paper chromatographic estimation of blood urea nitrogen, currently being introduced,* reportedly permits chemical confirmation within 10 minutes of clinically suspected uremia.

Studies in the present author's laboratory reveal alpha-2 globulin to be elevated in uremia.[1,28,29] These findings have been corroborated by workers in Ireland.[30] Paper electrophoresis accurately separates this protein fraction, but at least eight hours are required for this result. Moreover, although serum alpha-2 globulin is a reliable index of uremia, it is nonspecific. Serum haptoglobins,[31] which are hemoglobin-combining components of the alpha-2 fraction, are under study as possible indicators of subtle changes of rate and depth of uremia.[29] Simply performed measurements, namely, decline in urinary specific gravity, decrease in renal excretion of phenolsulfonphthalein, and, lastly, impaired renal excretion-absorption of chlorides, disclose—in that order—progressive features of renal damage.[32,33]

Important changes detectable in uremia by laboratory studies include the following:

Normochromic, Normocytic Anemia. This is probably the result of depressed bone marrow erythropoiesis[34–36] and/or increased hemolysis.[36A,36B] Generalized bleeding may be extensive and severe in uremia.[37,38] The anemia in uremia is iron resistant and vitamin resistant. Even repeated, small transfusions of whole blood or packed erythrocytes fall short of long-term beneficial effect. Cobaltous chloride may produce encouraging transient remissions of uremic anemia, but vomiting and (reversible) deafness may be encountered as side reactions.[34]

Increased Serum Phosphate. Progressive reversal of the calcium-phosphorous ratio ensues.

Acidosis. This is indicated by decrease in serum carbon dioxide, reflecting accelerated protein catabolism, impaired renal excretion of both sulfate and phosphate, and, also, inadequate renal production of ammonia and base-sparing exchange of hydrogen ion.[39–41] Under various circumstances, periods of alkalosis may exist, generally transient.[2]

Anhydremia. Multiple, extensive derangements in extracellular fluid are usual. Measurement of specific gravity of plasma provides a useful clue as to degree of water lack.[42]

Hypocalcemia. Absorption of calcium across the bowel wall is impaired as a result of a possible specific uremic defect in response of the bowel to the influence of vitamin D and/or a combination of calcium with phosphates within the lumen of the bowel. Severe degrees of hypocalcemia are uncommon. Blood levels of phosphate and sulfate are increased as a result of reduction of glomerular filtration and increased mobilization from protein catabolism. Breakdown of organic phosphate may also contribute. These changes, along with the development of acidosis, aggravate bony decalcification and metastatic calcification in the soft tissue.[21] "Uremic tetany" need not take place in the presence of decreased total serum calcium, since the ionized rather than the protein-bound fraction is of key significance in the regulation of neuromuscular irritability. Physical findings of latent tetany may often be elicited. Finally, it should be recalled that hypocalcemia may simply reflect hypoproteinemia, despite homeostatic shifts normally occurring between the ionized and protein-bound partitions of serum calcium.[43]

Hyperkalemia. This is attributable to release of potassium from muscle cells damaged by edema and other forms of tissue injury[44,45] and/or to changes in permeability of cell membranes,[46] and is potentially capable of leading to myocardial arrest.[47] Exchangeable body potassium is usually low in renal failure.[48] Hyperkalemia, therefore, probably represents a distributional defect, possibly related to metabolic acidosis.

TREATMENT

Fluid and Electrolyte Balance. Preservation of fluid and electrolyte balance, sparing of protein catabolism, and circulatory support constitute the essential aims of interim therapy in acute anuria. Acute renal failure is best managed conservatively on the premise that suppression of function is reversible.[49] Such supportive therapy is predicated upon tiding over the patient until his kidneys can resume

* Produced by Warner-Chilcott Laboratories, Morris Plains, N.J. (Appleton, H. D.; Mandel, M., and Sola, A. M.: Survey procedure for blood urea nitrogen [abstract], Clin. Chem. 5:266-267, June, 1959.)

their function, even though temporary or lasting degrees of renal damage may be anticipated.[50, 51]

The consensus prevails as to limiting fluid input, estimating the required volume by: (1) replacement of insensible fluid loss (about 800 cc. daily for the average-sized adult in a temperate climate[42]; (2) compensation for volume lost by vomiting, diarrhea, tube drainages, exudations, and vaporization due to fever (about 500 cc. daily for each degree of temperature above 100 F); and (3) deduction of endogenous water production, estimated at about 350 cc. daily in the presence of carbohydrate and fat therapy.[52–54]

Accurate daily recordings of total body weight are the simplest and least expensive method of evaluating the fluid equilibrium, particularly in the anuric patient. A search is regularly undertaken for dependent peripheral edema or pulmonary edema by means of observation, palpation, auscultation, and roentgenography. Ideally, if correct fluid replacement is being maintained, weight loss of 0.5 to 1 lb. daily develops during anuria.

Daily determinations of serum sodium, potassium, carbon dioxide, and chloride are advisable during the anuric phase[7]; equally important, although perhaps less frequent, measurements are indicated during the recovery stages of oliguria and diuresis.[44, 55] It must be emphasized that extensive electrolyte loss, often lasting for months, may occur in the urine during recovery from acute urinary suppression.[45] Bull[42] recommends administration of bicarbonate or lactate in correction of acidosis, as calculated for that patient's specific degree of acidosis, during renal failure as well as in the period of recovery. In rare instances, water depletion with hypernatremia may follow diuresis.[51] Thorough clinical and biochemical appraisal is recommended for each patient on an individual basis, considering organic recovery and financial burden, in that order, as determining factors for type and frequency of laboratory studies.

Electrocardiographic findings are of distinct aid in delineating diagnosis and prognosis, particularly in regard to hyperkalemia during anuria[47] and hypokalemia during diuresis.[44, 45]

Sparing of Protein Catabolism. Daily caloric needs, variously estimated at 1,000 to 2,000 calories,[56, 57] are provided either by parenteral infusion—preferably through indwelling plastic cannulas in an antecubital vein, irrigated by small volumes of heparinized solution twice daily—of 10 to 50 per cent sugar solutions (namely, glucose or "invert sugar"[58, 59]) or by high-fat and carbohydrate mixtures administered by indwelling, plastic nasogastric tubes.[7, 60] Worsening acidosis during this attempt at sparing protein catabolism may be combated by small, calculated amounts of intravenously administered 5 per cent sodium bicarbonate or one-sixth molar sodium lactate solutions,[7] or by oral preparations of the base.[42]

Management of Hyperkalemia. Hyperkalemia is feared during acute anuria as presaging myocardial arrest. Countermeasures consist of the following:

1. Glucose-insulin solutions[7, 60] are administered on the premise that sugar exerts a facultative effect on absorption of potassium into the cell. Crystalline insulin, provided at a ratio of 1 unit for each 1.5 to 2 Gm. glucose, is believed to accelerate conversion of hepatic and muscle glycogen to glucose and to enhance peripheral oxidation of glucose. (Depression of hyperkalemia by this means is of brief duration.)

2. Potassium-binding properties of ion-exchange resins are utilized.[61–63] The binding of potassium, usually by sodium exchange or hydrogen exchange in a carboxylic resin, may not be rapid enough, may prove difficult in the presence of vomiting (offsetting the effect of orally administered resins), may form fecal impaction (after rectally administered resins), and, finally, may prove inadequate for a long-term effect against progressively increasing hyperkalemia. As a note of caution, cognizance should be taken of the knowledge that hydrogen or ammonium cycle exchange resins may themselves induce metabolic acidosis.[64]

3. Hemodialysis by intracorporeal routes (bowel,[65] peritoneal,[66] or pleural lavage[67]) or by extracorporeal mechanisms, that is, the artificial kidney,[68–70] should be done.

4. Exchange transfusions of whole blood are given, consisting of concomitantly withdrawing up to 7 pt. of the patient's blood and intravenously infusing an equal volume of donor blood.[16, 71] This procedure has not won general acceptance in this country. Reduction of hyperkalemia thus achieved may not be lasting and the expense is considerable.

Briefly, intracorporeal lavage * has been

* The most recent report encountered on peritoneal dialysis cites means of overcoming many of these objectionable characteristics. (See "Additional References" at end of this paper.)

found to be cumbersome, uncomfortable to the patient, and of limited value in achieving adequate ion exchange. The likelihood of infection following peritoneal irrigation has been a cause for concern, despite amelioration by antibiotic therapy.

Extracorporeal Dialysis. Use of the artificial kidney has attracted much interest since modern demonstration of its clinical practicability by Kolff in 1944 and subsequent publication of his monograph in 1947.[17] That such an apparatus can promptly reduce hyperkalemia and blood urea nitrogen while concurrently facilitating selective revision of serum electrolytes is undisputed. The improvement effected by the artificial kidney cannot be assigned to its removal from the body of any specific factor.[72]

The matter of clinical judgment as to when the artificial kidney is to be utilized during acute renal failure is becoming clarified.[68, 72–74A] Manifestly, this decision depends upon the basic cause (if definable) of renal failure and the clinical-laboratory findings at the given phase of the patient's response.

As in conservative therapy of acute renal failure, the artificial kidney is applied in those instances in which renal damage is potentially reversible, however severe the original and continuing systemic or renal insult. No temporal boundaries can be drawn for conservative treatment, after which use of the artificial kidney is to be instituted. It is the catabolic course in the individual patient[56] that must determine therapy, regardless of the number of days of acute renal failure. Thus, recommendations for 10 to 15 days of conservative therapy are but broad generalizations.[69] If diuresis fails to eventuate and study of the particular patient reveals rapidly progressing hyperkalemia and/or uncontrollable acidosis, these become the prime parameters that determine prompt recourse to the artificial kidney or any other form of vigorous therapy.

Whether single or repeated resort to the artificial kidney in chronic renal insufficiency is prudent awaits further study. Obviously the indications for use of this procedure are less dramatic and the results are usually less pronounced than in acute renal failure. Opinion is divided for[69] and against[49, 73] the value of artificial hemodialysis in chronic renal decompensation.

Offsetting Infection. Antibiotics are recommended for prophylactic value amongst the supportive measures instituted during acute renal failure.[7] Discretion as to prolonged use of these compounds is urged, since organism resistance,[75] side reactions,[76, 77] flourishing of monilial growths,[78] and "superinfection" with marked virulence of otherwise insignificant bacterial organisms[79] may result in serious problems, if not a disastrous outcome. Thus, withholding antibiotics until necessary would appear realistic.

Anabolic Effect of Androgen. Only a word need be said regarding the purportedly useful role of testosterone during acute renal insufficiency. It is known that protein anabolism is abetted by the male sex hormone.[80] Whether it subserves this effect in the anuric patient is debatable. Since it is apparently innocuous and may be of adjunctive value in therapy, testosterone propionate may be given in daily doses of 25 to 50 mg. intramuscularly.

Control of Vomiting. Intramuscular administration of 25 to 50 mg. chlorpromazine four times daily has been occasionally effective against nausea and vomiting in uremia.[81] The same frequency and dose is given orally as soon as tolerated.

Electrolyte Patterns in Diuresis. After diuresis has taken place, attention must be directed toward replacement of sodium and potassium loss in the urine.[45] By determinations of serum levels of these cations, in correlation with quantitative analyses of their content in 24 hour collections of urine, restitution may be intelligently undertaken, with full realization that the serum and/or urine values for potassium do not quantitatively reflect the dynamics of the intracellular potassium status. At intervals, for even several months after the acute renal failure, the patterns of urinary sodium and potassium loss will aid in determining restorative dosages. Oral ingestion of a varied meat, citrus fruit, and vegetable diet usually suffices to provide adequate potassium. When restitution of this cation is urgent in the parenterally maintained patient, potassium chloride solution is diluted in a fluid vehicle. Usually not more than 50 mEq. are given intravenously per day, at a rate not to exceed 20 mEq. per hour.[82] However, in the presence of good urinary output, larger amounts of potassium may be given. Hypodermoclysis has long been advocated as the safest route for parenteral administration of potassium, but it is most painful to the patient when thus administered.

Dietary Protein During Recovery. Since some degree of renal injury may persist after

clinical recovery from the acute urinary suppression, the problem of protein replacement is encountered. Many years of dispute underscore this consideration.[27, 73] Coma has been described in patients with severe liver disease given over 50 Gm. of dietary protein daily.[83] It is highly doubtful that this finding can be extrapolated to renal disease as a basis for restriction of dietary protein.[72] It would appear reasonable to provide to an adult about 40 Gm. dietary protein daily and, additionally, up to 40 Gm. more, if urinary protein loss is large.[40, 42, 84] It is unlikely that intravenous use of concentrated serum albumin, such as is administered to patients in the nephrotic phase of glomerulonephritis,[85] would be required. Dextran has been found useful as a plasma expander in relieving nephrotic edema, although a low-sodium diet must be maintained to preserve a prolonged effect in this condition.[86] Temporary use of dextran during recovery phases of acute renal failure appears theoretically attractive, but should not be applied beyond investigative trial as yet. The work by Luetscher's group,[87] pertaining to encouraging diuretic results in treatment of nephrotic children with cortisone and ACTH, deals with a different type of renal pathology from that discussed under "acute uremia," that is, acute renal decompensation.

Although "acute uremia" has been given primary attention in this exposition, chronic uremia is encountered more commonly than its acute counterpart. Whenever prerenal or postrenal pathology exists, proper diagnosis is patently the first obligation of the physician. Then reparative therapy, medical or surgical, may be undertaken, in keeping with the considerations reviewed here.[88]

RECENT RESEARCH ON UREMIA

Relatively few basic studies on the etiology of or fundamental biochemical mechanisms in uremia have been reported in recent years. Attempts have been made to correlate various components of the serum with clinical manifestations of uremia, but the relationships appear indefinite.[18–20, 88A]

In an effort to evaluate the biochemical alterations within the serum proteins in uremia (on the assumption that the "toxin" of uremia would be of large molecular weight), this author[89] ligated the ureters in dogs and prolonged life in the ensuing uremic state by oral and rectal administration of cation exchange resins. Hyperkalemia was thereby obviated and the animals presumably "died of uremia" per se.

Elevation of the alpha-2 globulin fraction of the serum was observed by the technique of paper electrophoresis.[89] In those animals surviving longest (up to 150 hours) after ureteral ligation, the stain intensity representing alpha-2 globulin was greater than that of dogs similarly operated on which survived for a briefer time in a uremic state.[89] Purification of alpha-2 globulin[90] and study of its physiological significance,[91] as well as that of haptoglobin,[29] are in progress.

In the same groups of uremic dogs, myocardial cholinesterase progressively diminished as the period of survival of the uremic animal was lengthened. It was suggested that quantitative and perhaps qualitative alteration of this enzyme brought about a change in membrane permeability of the myocardial cells to potassium, thereby accounting for the hyperkalemia as well as increased potassium content of the myocardium.[71, 92–92B] On this hypothesis, hyperkalemia would be primarily an index of myocardial damage; cardiac arrest would be directly attributable to persistence of acetylcholine—and to the vagal effect of the latter. An analogous situation was reported by Holland and Greig,[46] who postulated that selective permeability of the erythrocytic membrane was lost when choline acetylase became catalytically inactive.

It is hoped that a highly sensitive biological preparation for the estimation of even slight changes in renal function will result from surgical reduction of renal mass. In our two-stage operation[93] one and one-half kidneys are removed from a dog. Uremia should be readily induced by various insults to the renal mass. Specific interest will be directed toward any "toxic influence" upon kidney function of serum alpha-2 globulin[90] and various haptoglobin fractions.[29]

During an inflammatory process within the renal parenchyma, autoantibodies develop against damaged kidney tissue itself, thereby aggravating the renal pathology.[94] A similar mechanism has long been recognized from the effects of administering antikidney serum prepared in heterologous species of experimental animals (namely, "Masugi nephritis").[95, 96] Interestingly enough, recent reports indicate that heparin will clear the hyperlipemic serum of nephrotic patients[97] and prevent nephrosis in "Masugi-type" recipient animals.[98]

Whether transposition of these serum lipo-

proteins bears a relationship to the disappearance of hyperlipemia and hypercholesterolemia upon the advent of uremia in the chronic nephritic patient is as yet unknown.[21,99]

Excellent reviews exposing basic data and citing unresolved problems in uremia and in regard to renal function have been published by Bradley,[21] Swann and Merrill,[51] and, more recently, by Winton.[100]

Some investigative approaches to the enigmas of uremia have been cited. It is hoped that more intensive and more varied studies of the manifold processes constituting the clinical syndrome known as uremia will be forthcoming.

SUMMARY

1. Definition of uremia and some pathological processes that may culminate in this clinical syndrome have been enumerated, and the lack of knowledge concerning the biochemical changes or substances that precipitate the renal failure has been noted.

2. Clinical and laboratory features of uremia have been briefly reviewed. Emphasis has been directed toward therapy in acute renal failure, and treatment predicated upon the catabolic changes within the individual patient has been discussed. Principles of conservative management of fluid imbalance, hyperkalemia, and acidosis have been delineated. Consideration has been given to the purpose of hemodialysis, particularly as accomplished by the artificial kidney. The adjuvant use of antibiotics—noting the risks involved—the anabolic "value" of androgen in acute renal failure, attempts at drug suppression of uremic vomiting, and the subject of dietary protein maintenance during recovery have been touched upon.

3. Some of the current experimental investigations pertaining to uremia have been briefly outlined.

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Observations on the Synthesis of the Modern Physician

Charles S. Cameron, M.D.

TONIGHT YOU ARE MEDICAL STUDENTS—a distinctive and superior class of mortal beings. There was a time when the term "medical student" had a faintly invidious connotation. Medical students were widely regarded as fast-living, hard-drinking roués—the most venal of the scholastics. It is within my memory that a solicitous mother would rather have her daughter go out with a sailor than with a medical student. But sailors have become respectable today and society now puts a new value on the medical student.

This medical college has many distinctive features, including the fact that it is the only college of medicine for women in the United States and one of the very few in the world. One may ask the basic question, "Why a medical college only for women?" In order to answer that, it is necessary to ask a still more basic and an older question—"Why a medical college only for men?" It was because, with few exceptions, no answer to this question existed 107 years ago that the Woman's Medical College came into being. Its record has earned it a conspicuous and permanent place in world medicine, and, although the doors of many medical colleges have been opened to the distaff side, it is obvious that WMC is here to stay. Of course one wonders why the admittance of the opposite sex should not be a reciprocal arrangement and whether in time the trend toward coeducation will involve WMC. If I am permitted tonight to give advice, it is this: do not admit a man to your ranks until the last all-male medical school gives in. Then you will be on the spot.

Probably the greatest distinction of this school is its standard of scholarship. As an example, may I remind you that WMC was one of nine for which no failures in state board examinations in 1956 were recorded. This record is all the more remarkable when one considers that graduates of WMC took medical licensing board examinations in 11 states last year.

May I first clarify the intention of these remarks to you this evening, remarks I have entitled "Observations on the Synthesis of the Modern Physician." Obviously time will allow of only "some" observations. I have used the term "synthesis" with some hesitancy, because synthetic products are often thought of as being fakes, whereas WMC is concerned in turning out only genuine physicians. You understand, of course, that I reserve the word synthesis to mean the process of mobilizing and fusing science, skill, and judgment. One hears the phrase "a born doctor." But, although you may have certain innate qualities that tend to embellish the final product, physicians are not born: they are made—by others and, above all, by themselves. Finally, I have referred to the making of "modern" physicians, for our rapidly changing medical, scientific, and economic order requires considerations of changing concepts of medical practice.

At the outset let me state what I conceive to be the purposes of the Woman's Medical College and Hospital, and I do not do so in what I consider to be the order of their priority. First is medical education. Second is the care of the sick and the prevention of illness —a function that may conveniently be called

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service. Third is the advancement of knowledge of biological science, or research. In what follows, I shall refer to each of these purposes as they find application in the making of the modern physician.

Those of you who will graduate within the next four years, and I expect that will be all of you, will be rather different, in respects other than age, from those of us who graduated 20 years ago, and very different from the physicians who cared for your grandparents when they were your age. Much of the difference can be attributed to the changing patterns of illness and causes of death within the space of a generation.

A little over 150 years ago a most remarkable Englishman by the name of Horace Walpole wrote these whimsical lines:

> About the time, or a little after, I die,
> the secret will be found out of how to live
> forever.

Recently an eminently readable modern poetess, Helen Bevington, undertook to write a progress report to Horace, presumably in the hope of assuaging any remorse he might be feeling for having made his exodus too soon. She wrote:

> Horace, be comforted to die.
> One century has meandered by
> And half the next since, it was true,
> The temporal state eluded you.
> Now as I read your pensive letter,
> I wish myself that times were better
> And I might boast how men contrive,
> As you foretold, to stay alive.
> By now we should possess the key
> To fleshly immortality
> And if we wanted to, endeavor
> To live forever, and forever.
> This, to my infinite regret,
> Is not a custom with us yet.
> I write you, Horace, for good cheer.
> Life is about as usual here.

Actually Miss Bevington was engaging in traditional poetic license, for life is not about as usual here by any means. A baby born in Walpole's day could look forward to about 35 years of living. The life expectancy today is 68 years for men and that for the weaker sex is close to 72. At the turn of the century there were some 13.5 million aged 45 years or over. Today the number in that age category is in excess of 42 million.

As a nation we are growing older—a bright circumstance brought about chiefly by our substantial measure of control over infectious and contagious disease. Tuberculosis, the great white plague of grandfather's day, is now ninth in the list of causes of death. Typhoid fever is now a disgrace to any community. During my junior year no less than five hours of lectures were devoted to it, although the professor admitted that most of us would never encounter it in a lifetime of practice. Curiously enough, in my first month of internship I was helping to care for 72 typhoid patients all of whom several weeks before had attended an American Legion picnic and partaken of potato salad prepared by a carrier who operated a delicatessen in West Philadelphia. Lobar pneumonia, "Captain of the Men of Death" as recently as my medical school days—taking as it did the life of one in every three it struck—now has a mortality of less than 8 per cent. You are too young to have experienced the childish terror with which I viewed the red and yellow placards reading "diphtheria" or "scarlet fever." But these are not unmixed blessings, for as a price for living longer we now pay in the coin of cancer and cardiovascular disease. Yet who would call death from cerebral hemorrhage at 65 or cancer of the prostate at 70 years of age a poor bargain for deliverance from death at 5 from meningitis, at 20 from tuberculosis, or at 40 from pneumonia?

All this adds up to a revolution of disease such as man has never before experienced. The impacts of it are varied and far-reaching. And, of special concern to us here, it calls for the reorientation of curriculum emphasis, for it requires of modern physicians a new concept of what is important. No matter that the long and too-often losing battle against cancer of the breast may appear less exciting than the old skirmish with pneumonia, with its dramatic, brief crisis. Our task is to recognize the emergence of the so-called degenerative diseases, including mental illness, as the foremost medical problems of our time, and to accept the research and clinical challenges that they present. This does not imply the least de-emphasis of any phase of medical practice or teaching. It is a plea that the present leading causes of disease and death engage the same spirited interest accorded their predecessors of 30 years ago.

The service phase of the indoctrination of physicians is contained wholly within the hospital and its outpatient clinics. The treatment of the sick is the prime function of any hospital, but in a hospital affiliated directly or

indirectly with a medical school a second objective is the teaching and training of students by exposing them to sick people. This statement is obvious enough to deserve criticism of triteness. Yet as we measure the time-progress curve, it is relatively an innovation. It is in the memory of physicians still practicing that the course in medicine consisted wholly of didactic lectures unrelieved by laboratory exercise or by patient contact. Reform came by way of the clinical amphitheater where entire classes could be eyewitnesses to demonstration of disease. A further step was taken when students were encouraged or required to accompany the professor to the bedside: grand rounds or ward walks became popular techniques of clinical teaching. Finally, clinical clerkships arrived, permitting students to study illness directly by taking histories, by examining patients, and by carrying out laboratory and other investigative procedures. The growing popularity of the clinical clerkship would suggest its superiority to other devices of clinical teaching. Yet it will be to the student's advantage to recognize its hazards or, to put it another way, to acknowledge the additional responsibilities that it places on the student. I know of no greater opportunity for misusing a large amount of time than that which the clerkship offers. The student is more or less on her own and is the major determiner of her pace and thoroughness. But she realizes too that, under these circumstances, no defection on her part will affect the patient's course in an important way; thus she may fail to experience any significant feeling of responsibility for the patient assigned to her. A further difficulty is presented by the clerkship. Unless the student perceives in each case a need for additional reading and study in texts or in the current literature, which she then pursues, she will come at the end of her clerking days to find that she has learned a lot about a little. She must, then, be constantly sensitive to this most severe limitation of the clerkship method: She will spend much time on few lessons although these few she will learn well. It is largely her own initiative that will extend her self-budgeted study broadly enough to make her a good physician, an important step toward which, need I remind you, is passing a state board examination.

In addition to making sick people well and affording clinical experience to student physicians, the service phase of the teaching hospital has a third vital function. It is one to which little formal reference is ever made, probably because it involves relationships and attitudes of so personal and individual a nature that they cannot be dealt with in class or even in group discussion. I am referring to what has been called the priestly functions of the physician. It is what Schweitzer means by the "ethics of reverence for life." It is a kind of spiritual quality. For me it is all in the one word "compassion." And it is in the hospital where you lay your hands on sick people for the first time that you will begin to feel it. I hope you will see in it the great good thing it is and that you will let it flower in you to the full. It will not let you become complacent or satisfied. It is certain armor against assuming anything, against taking anything for granted. It will assure you against easy, slipshod practices whereby you do less than you can for everyone who trusts you as his physician. It will effectively serve as an antidote toward any tendency to take a chance. It will force you to regard all who come to you with respect, to encourage your patients' confidence, and, when you have their confidences, to keep them sealed. It will deny you the luxury of querulousness and impatience with those who are ill. It will make you heedless of the clock when you are fighting for a life. And, when you know you are going to lose, it will never allow you to abandon a patient by saying: "There is no more I can do." Compassion will always find something more to do and will serve you with the spirit to do it.

Compassion and science are poles apart and, as medical practice becomes increasingly scientific, compassion risks dilution. Yet the heart and the mind can be blended and, where they are, there stand the best of the noblest profession.

The third sphere of the medical teaching center is research. It is frequently categorized as being of two sorts—basic and clinical. Basic or fundamental research has in its purest form no specific objective. It seeks only to increase the store of man's knowledge. It has been called "research for its own sake" and "the quest for facts." Clinical research frequently has specific identifiable objectives—as a rule, improved methods of diagnosis or treatment. But this tendency to classify research has led to some minor confusion. Because clinical research usually involves human subjects and because fundamental research so often is confined to a strictly disciplined laboratory en-

vironment, the distinction between bench and bed or mouse and man has been introduced. Such distinctions are sometimes unfair to both kinds of investigators, for the so-called pure scientist may, and often does, provide information having more or less direct application and the research-oriented physician can make, and has made, observations of fundamental significance even though they have not appeared at the time to have any utility.

A striking example of the interplay of fundamental and clinical interests is shown by the development of modern cytology, a development dating back to the 1920's when a young physician recently arrived in this country from his native Greece was beginning his studies of estrus and the sexual cycle in certain mammals. During his observations of the physiological phenomena related to the sexual cycle, Dr. George Papanicolaou discovered that the vaginal epithelium underwent periodic structural changes that correlated precisely with the phases of the sexual cycle and further that these changes could be observed in the exfoliated epithelial cells found in abundance in the vaginal secretions. While this discovery led to a practical method for measuring hormone activity and, indeed, to the isolation of the estrogenic hormone, it led to a discovery of even more practical utility so far as cancer in human beings was concerned. The next logical step in the study was to determine whether similar changes were present in the human being. It was found that they were, but in the course of examining a great many women it was inevitable that now and then a subject would be encountered who was suffering from known or unsuspected cancer of the uterus. In each case strikingly abnormal cells were observed, differing from the normal in their over-all size and shape, in the nuclear-cytoplasmic ratio, in nuclear configuration, and in staining affinity. Extensive checking of this finding on large numbers of patients known to have uterine cancer established the reliability and usefulness of a test for uterine cancer based not on the time-honored relationship of cells en masse but on the features of individual cells—isolated or in small clumps. The usefulness of the vaginal smear as a means of uncovering early and curable cancer of the uterus is now rapidly becoming accepted by gynecologists and pathologists.

This sequence of events is a superb example of serendipity. "Serendipity" is a word coined by our friend Horace Walpole, who appears to be contributing so generously to these proceedings today, after he had read the story "The Three Princes of Serendip." Serendip was a province in Ceylon and these gentlemen of the royal line had early in life made the observation that, if they made plans to picnic at a nearby cove or journey to some distant part of the island for one reason or another, they were frequently beguiled by persons or places to change their plans, and they noted that when they did so they usually had a much better time than if they pursued their original objective. Walpole intended his word "serendipity" to apply to that phenomenon in scientific discovery where, in the course of pursuing a predetermined objective, observations are made that are frequently of greater significance than the expected results of the originally designed experiment. These fortuitous discoveries have been called "happy accidents." Incidentally, after inventing his word Walpole tried it out on a literary friend and asked him what he thought it meant. His friend said, "I imagine it denotes that state of mind consisting of equal parts of serenity and stupidity."

Now, what does research have to do with synthesizing a modern physician? First, research—the amount of it, but above all the quality of it—determines in important degree the intellectual tonus of a medical college. Without a pervasive spirit of inquiry, medical education is nothing more than a superior brand of vocational training. A dividend of this quality of intellectualism is, naturally, improved standards of patient care. Second, by exposing medical students to research methodology, a spawning ground for future research scientists is provided. Third, by demonstrating the observational method and by training students to see the significant in the casual, research establishes the inferiority of traditionalism and empiricism in medical practice. In speaking of seeing the significant in the casual, I am reminded of the legendary tale of how Newton was stimulated by so simple an event as the falling of an apple to speculate upon deep universal forces, from which speculation he evolved the law of gravitational force. One thinks, too, of a young man named Watt, driven by so humble an event as the lifting of a teakettle lid by the pressure of steam within the pot to construct a machine that has revolutionized human living, or of Galileo watching the lamps swinging on their long chains in the cathedral

ment with bodies in motion and to ultimately write the law of the pendulum from which has come all we know today about the physical universe. The paradox is clear. How many men before Newton had observed apples fall? How many boys before Watt had observed the rattling lids of teakettles? How many pious Italians before Galileo had watched those swinging lamps? Yet they all remained unmindful of the fact that they were being brushed by the wings of great mysteries, and I submit to you that it is happening to us every day we live. It happens to physicians more than all others. In the lobby of the students' dormitory at the Harvard Medical School are engraved these words of Pasteur: "Dans les champs de l'observation le hasard ne favorise que les esprits préparés." Exposure to the research environment and stimulation by those whose lives are motivated by questioning is intended to breed prepared minds.

And now, a final, somewhat personal word. Most people or, I suspect, all people who undertake protracted and demanding tasks have moments of discouragement, frustration, or even regret. I have had such blue moods from time to time in whatever I undertook and I cannot look forward to changing now. I expect that you will have them too. If you do, may I suggest that you try the formula that has worked so well for me. It is to repeat the fragment of a prayer frequently spoken by one whose entire life was devoted to noble and vastly important enterprises—Sir Francis Drake. "Grant us to know that it is not the beginning but the continuing of the same until it is finished which yieldeth the true glory."

An Unusual Medical Student

Dr. Magdalena Sokolowska of Poland, who holds degrees in medicine and in medical science, is now adding another to her achievements. In February, 1960, she will be granted a master's degree in public health from Columbia University.

Now 37 years old and chief of the Department of Medical Care in Industry of the Institute of Industrial Medicine in Lodz, Dr. Sokolowska has had a stormy medical career by any standards. She began her medical education in an Underground school in Nazi-occupied Warsaw. She was captured by the Nazis who took her to Munich, where she was made to do domestic work in the home of a Nazi official. She escaped from there to Vienna and worked with the Underground as a nurse's aide. Her studies were resumed after the war, and four years later she received her medical degree from the Polish Medical Academy at Gdansk.

Her work has made her famous throughout Poland, and she has published many papers on sickness, absenteeism, women in industry, and the organization of industrial medical care. She was the organizer of an industrial health program in a textile factory that has since served as a model for Polish industry. The employees of this plan receive both preventive and therapeutic services.

She is the wife of Dr. Stefan Sokolowski, a neurosurgeon, and mother of two children, Maria and Stefan, aged 8 and 9 years old respectively.

As she told *Scope*, "I am learning much in the United States that will help my country. I am particularly interested in public health programs and in American methods of teaching. . . . In addition, the warmth and friendliness of both the student body and the people attached to the school make learning here a great pleasure which I shall never forget." (From *Scope Weekly*, July 8, 1959, p. 8)

Bobbies, Beefeaters, and British "Medzin"

Jo Anne Brasel, M.D., Nancy Nelson, M.D., Eveline Schneeberger, M.D., and Florence Uyeda, M.D.

How do senior medical students spend their last long vacation before facing the stern reality of internship responsibilities? We went to England.

Dr. Donough O'Brien, a Colorado University pediatrician from England, had suggested doing a clerkship in a British medical school. Since there was no language barrier, we were able to take full advantage of conferences, clinical lectures, and ward rounds. So, after Dr. Reginald Fitz, the Assistant Dean, had written the appropriate diplomatic letters, September, 1958, found us bound for Great Britain and a glimpse of British "medzin" in the London, Guy's, and St. Bartholomew's hospitals in London and Edinburgh's Royal Hospital for Sick Children.

The London Hospital, fondly known to its students as "the London," is one of the more modern great hospitals of England. The plans for such an institution were first conceived in the Feather's Tavern in Cheapside in 1740, its main purpose being to offer refuge for the ailing poor. Today "the London" is a 1,000-bed institution with eight annexes in outlying districts.

As one gets off the red double-decker bus or comes crawling up from the subterranean tube in Whitechapel, one is confronted by a long, two-story black building with a red neon sign in front proclaiming through the murky fog that this is the London Hospital. It was always somewhat disillusioning to think that "the London" people would stoop to such depths as to use a neon sign. Yet in this drab setting among the city slums many great men have worked, such as Sir John Parkinson and Sir James MacKenzie. Today Prof. Clifford Wilson, Sir Russell Brain, and Lord Evans, the Queen's physician, are on the staff.

Drs. Brasel, Nelson, Schneeberger, and Uyeda were senior medical students at the University of Colorado Medical School, Denver, at the time this paper was written. They graduated in June, 1959.

Near the south end of London Bridge, of nursery rhyme fame, stands Guy's Hospital. On entering the gates one sees the statue of Mr. Thomas Guy standing in the quadrangle. Thence passing through the colonnade, which opens out upon the hospital buildings and the medical school, one mingles with hundreds of long-haired, dark-suited medical students muffled to the ears in navy and gold Guy's scarves. Inside the somber-faced medical school, one notices busts of famous men of Guy's—Richard Bright, Thomas Addison, and Thomas Hodgkins.

It is perhaps of interest that Guy's Hospital was the last of the London medical schools to admit women, which it did in 1947. This is a rather unusual fact since the British government now insists that 10 per cent of each class be women.

Students of other London hospitals spoofingly describe St. Bartholomew's as "that place between the church and the slaughterhouse." The church referred to is Christopher Wrenn's St. Paul's Cathedral, while the nearby "slaughterhouse" is the huge Smithfield Market. Its cockney butchers in their blood-stained long white coats are frequent patients at St. Bartholomew's "accident box" because of hand lacerations. As at Denver General, such mishaps give junior students opportunity to practice suturing.

"Barts," as St. Bartholomew's Hospital (Fig. 1) is nicknamed by the Londoners, is a conglomeration of dark-grey stone buildings, two ancient churches, and an inner courtyard with a romantic moss-covered fountain. Founded by the monk Rahere in 1123, this is the oldest hospital in the world to have been in continuous service to the sick. It has withstood pestilence, Henry VIII, the fires of two world wars, and modern "teddy boys." Though it has sheltered such remarkable men as Harvey, Sir Percival Pott, Sir John Abernathy, and Sir James Paget, "Barts" has recently been more widely publicized by the "Doctor in the House" books, written by a former student who still is not looked upon with favor by certain members of the faculty, or so the story goes.

Fig. 1. Entrance to Barts.

The University of Edinburgh, the youngest of the Scottish universities, was founded in 1583 by Royal Charter granted by James IV. The medical school was founded in 1752 and rapidly gained prominence as one of the great European medical centers. The medical school, which stands in Teviot Row, is closely associated with the Royal Infirmary and separated only by a city park, the Meadows, from the Royal Hospital for Sick Children. In 1957 the medical school had a total enrollment of 1,177 students in their six year program leading to a Bachelor of Medicine degree.

Edinburgh, a city and royal burgh and the capital of Scotland, is situated to the south of the Firth of Forth on the east coast of the British Isles and lies 396 miles by rail north of London. The city occupies a group of hills of moderate height and the valleys between. In the center is a bold rock crowned by the castle. The city has had a long and ofttimes bloody history. Personages who once resided within its walls are familiar names to all—Mary Queen of Scots, Bonnie Prince Charlie, John Knox, Robert Burns, and Sir Walter Scott, to mention but a few. Monuments and memorials to these and many more may be found throughout the city gracing the parks and hillsides.

In each of the various London and Edinburgh hospitals, we joined our counterparts in their medical studies. British medical students spend three years learning clinical "medzin." To bridge the gap between the classroom and the ward, they are given a three month course in physical diagnosis and are instructed in pathology. After this they have six months each of medicine and surgery. During the next 12 months they are attached to various specialty "firms" and attend outpatient clinics. In the last four months before their qualifying exams they are allowed to spend their time as they please in preparing themselves for that rather harrowing experience.

The medical school course begins after the student's graduation from secondary school at the age of 16 years and culminates six years later with the Bachelor of Medicine (M.B.) degree. Then, if a British physician wishes, he may study further for an M.D. degree. With this longer period of training, the British medical school pace is less hurried and the students have time for numerous extracurricular activities. Thus, Wednesday afternoons are reserved for "rugger." The Drama Club has at least one play in rehearsal at all times, and the Gilbert and Sullivan Society presents quarterly concerts that rival those of the D'Oyle Carte Company. Pubs are an accepted part of the student's life, and, when on call, some are even paged there.

The wards, which are the holy territory of the ward sister, are always kept as neat as a pin, and a cheerful, quiet atmosphere pervades the place. The patients all appear quite contented especially during tea time when the more healthy ones gather around the gas fireplace in the middle of the ward to enjoy a "jolly good chat" and a cup of that fragrant English brew. It soon became quite apparent that the ward sister and her brigade of nurses have considerably more authority than their American counterparts and woe be to him who trespasses any of the unwritten laws ruling the wards.

It was a rather startling revelation to find that the medical students are allowed on the wards only from 9 a.m. to noon and from 2 to 5 p.m. The students have virtually no other responsibilities than to do a history and phy-

sical examination, some of which, incidentally, were absolute masterpieces in composition and physical diagnosis, and to examine the urine of their patients twice a week. The student teaching rounds are kept quite separate from the actual working rounds of the chief and his house staff. Whenever the professor is to make his rounds, all the patient's charts and roentgenograms are neatly laid out and the students are asked to leave the ward so that the great man can make his rounds with no distractions. Special student teaching rounds are then usually held in the afternoon.

The amount of interesting pathology to be seen on the medical and pediatric wards was indeed vast. Teaching, though rather didactic and with only a minor emphasis on recent research, was good.

Perhaps the most striking difference between British and American medicine is to be found in the handling of patients. We observed that purely from the human side, each patient, no matter what his standing in life, is regarded as a human being who is worthy of kindness and gentlemanly politeness and not principally as a case of so-and-so's disease. In working up a patient, a meticulous history and physical examination are done, keeping in mind that physicians are provided with five senses and a brain that can be put to excellent use in arriving at a diagnosis without half exsanguinating the poor patient. Yes, one finds far fewer laboratory slips cluttering the charts. Yet the British patients seem to get well too.

There is a current British joke in which a visiting Englishman compliments an American on his fine new hospital, to which the American replies: "Oh, that's our new laboratory! That little old lean-to is our hospital."

We enjoyed visiting with Dr. Roger Watkyns, one of Colorado University's senior surgical residents who is serving a year at "Barts." His British students listen eagerly to his practical suggestions and privately try to imitate his American drawl. He is respectfully addressed as Mr. Watkyns, as are all English surgeons; this is reminiscent of the days when surgeons were primarily barbers.

British surgeons prepare themselves for the operating theater's vicissitudes by donning knee-high rubber Wellington boots and long rubber aprons over which they wear the customary sterile gowns. The fine surgical technique we witnessed did not seem to require such vigorous protective measures.

When British medical students take their course in "midder" (midwifery), they spend a good deal of their time under the supervision of a midwife. These midwives are trained nurses with an additional six month's training in midwifery. Many of these remarkably competent women have had many years of experience and prove to be extremely wise and able teachers for the students.

At "the London" the Midwifery Department is actually divided into a hospital division and a district division and most of the patients with uncomplicated cases are delivered at home. The choice of whether an expectant mother wants to have both a physician and a midwife or only the latter to supervise her pregnancy and delivery is left up to her. Because of the limited space at the hospital, the beds are usually reserved for primiparas, those with obstetric complications, and for physicians' wives.

A visit to both divisions proved to be a rather heart-warming experience. It must be remembered that "the London" midwives take care of the Stepney area, that is, the area of the London docks and slums where conditions are often less than modern. Thus it is usually in the middle of the night that a prospective father will set out on foot to get the midwife. With the necesssary address in hand, she and the medical student on duty load their equipment on two bicycles and pedal hurriedly through the night. Usually everything goes well. Should the rare complication arise, the R.A. (resident accoucheur) at the hospital is called; if the problem is serious enough the woman is taken to the hospital.

In the hospital, where several obstetric consultants are available, the midwife's authority is also very much in evidence, and one gets the impression that everything is run simply, cheerfully, and efficiently.

The British National Health Service, which most American physicians view with considerable apprehension, has been in force 10 years now. During this time the general physical well-being of the many working-class people of Britain has indeed been improved, especially in the areas of maternal and child health. Medical care has been made available to such slums as London's Bethnal Green, where in the past a tannery laborer could be born, live, and die without professional assistance.

While most patients cheerfully accept the Health Service, some of the more wealthy

people still prefer to have the private care of Harley and Wimpole Street specialists. These physicians carry on their busy private practices after performing their duties as chief consultants in the large nationalized hospitals. They are happy to be able to supplement their modest standard incomes.

We talked with a few of Britain's general practitioners. They grumbled about their huge lists of patients and the long hours they are forced to work. Much of their time is taken up by the "crocks" who are flourishing under the Health Service's munificence. One general practitioner remarked that if British physicians had been as well organized as is the AMA they would not have found themselves socialized. The physicians have recently banded together as the British Medical Guild to protect themselves against further regimentation. All the consultants, house staff members, and medical students we met agreed that medicine is now permanently socialized in Britain.

We spent weekends in seeing the English countryside and in becoming better acquainted with the setting in which British medicine functions. We went to Scotland, the Lake District, Wales, and the Wye Valley, traveling by train, foot, and lorry. Hitchhiking is quite accepted in Britain and we spent many delightful moments bumping along country roads next to a jolly old lorry driver who was most willing to show us the local attractions after a few puffs on the Senior Service cigarette we had given him.

Practically every English home has its conscientiously tended flower and vegetable garden; one sees homemade glass greenhouses behind flats that lack indoor plumbing. The working-class Englishman is concerned about his geraniums, his children, the Queen's children, the double-decker bus strikes, and the slight possibility that he might win the week's football pool. He is not worried about the November fog, his chronic bronchitis, or the fact that he does not have a 1959 model automobile; for that matter, he does not have a car at all.

Several nights a week during our London stay, we sat enraptured on hard cramped benches up "in the gods," watching some of the world's most famous actors bring plays to life. Occasionally we were lucky enough to get tickets to see Margot Fonteyn with the Royal Ballet; on other nights we listened to one of London's four orchestras in the plush Royal Festival Hall.

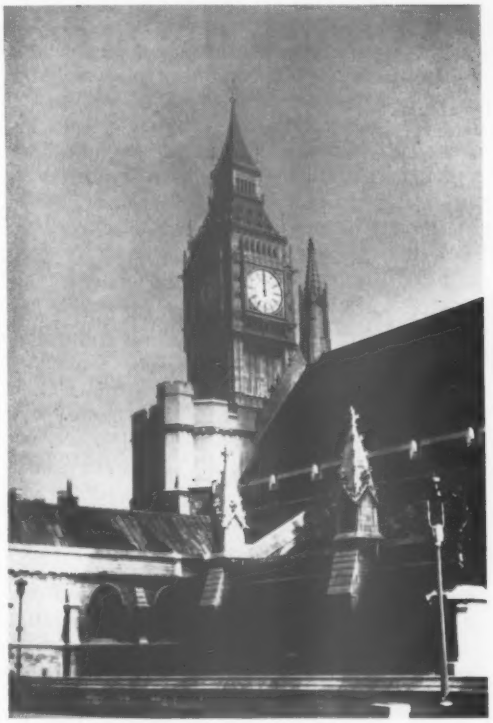

Fig. 2. Big Ben.

It was with sadness that our stay in London came to an end. After a frantic few hours of packing, we climbed into a black taxi and slowly rolled down Kingsway, over Waterloo Bridge, to Waterloo Station. Along the way we took one last fond look at the surroundings that had become so dear to us in our short stay. Black-bowlered, moustached businessmen were smartly going about their business. Here and there on the street corners stood vendors beside their glimmering charcoal burners roasting chestnuts. The big double-decker, scarlet-painted London omnibuses were slowly lumbering down the street. The thick grey London fog shrouded all in dampness. As we crossed Waterloo Bridge, Big Ben (Fig. 2) solemnly tolled out 4 p.m. as if mournfully bidding us farewell. Soon we were caught in the bustle of the sooty railroad station, surrounded by some of our medical student friends who had come to wish us bon voyage. As the train pulled out of Waterloo station, the sky was dark and only the twinkling lights of London could be seen in the distance.

Women in Medicine in West Virginia*

Edward J. Van Liere, M.D., and Gideon S. Dodds, Ph.D.

BECAUSE THE QUESTION of the place of women in the medical profession is still somewhat controversial, and because we have been connected with the West Virginia University School of Medicine and know personally almost every woman included in these data, we made this study of our medical school's women alumni. It is of historical interest that the admission of women to all branches of West Virginia University was in the earlier years a matter of serious concern, involving both the Board of Regents and the State Legislature. West Virginia University was founded in 1867, and, although a few women had been enrolled in some courses for several years, it was not until 1889 that coeducation was generally established in the University. Since the formation of our two year medical curriculum in 1902 until the present time, our admissions committees have accepted qualified women, with the result that the majority of our classes have included women.

SOURCES OF INFORMATION

Information regarding the women who began their medical training at West Virginia University was available from the records of the University registrar, from the files of the alumni secretary, and in communications from the medical schools to which the women transferred for the completion of their training. Furthermore, the American Medical Directory provided data on their professional careers.

To secure direct, personal information from the graduates themselves, the office of the School of Medicine sent out questionnaires in 1951 and again in 1957 to the 59 living women who had graduated from our school, who later received the M.D. degree from another institution, and for whom we had available addresses. Forty-one women replied to one or both letters, usually recounting their personal stories and impressions of their role in medicine. Only a few questionnaires were returned for lack of proper addresses. However, we did obtain some information on even those women via newspaper clippings and other relatively indirect sources. Seven of the 59 are now deceased, and at least 6 of those died between 1951 and 1957.

We had to rely on the American Medical Directory for apparent recent material on only 8 of the 59 women; but even that source offered some difficulty, because the professional names were not always those in our student files, the changes being due primarily of course to marriage and remarriage.

By no means the least of the sources of information for this study was our personal knowledge of these former students. By virtue of our small classes, we have been able to maintain contact with many of our students throughout the years; we had, therefore, considerable first-hand knowledge concerning the professional careers of many of these women.

NUMBER OF FEMALE MEDICAL STUDENTS IN WEST VIRGINIA UNIVERSITY

Up to and including the class entering in September, 1958, 89 young women (table 1) have commenced the study of medicine in West Virginia University. This number is 4.51 per cent of the total enrollment (1,970)

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since the founding of the School of Medicine in 1902. In this connection it is of interest that during the 1957-1958 school year 1,644 women were enrolled in medical schools in the United States. Their number was 5.57 per cent of the total enrollment.

SUCCESS IN THE STUDY OF MEDICINE

Of the 80 women who entered up to the year 1954, the last class having time to complete its work, 64 have earned the M.D. degree. This number is 80 per cent of those who entered, and it is almost the same percentage of success as for the men during the same years.

One of the measures of the attainments of these women lies in the fact that all of them had to transfer to some other medical school at the end of their sophomore year in order to complete the last two years of the curriculum. The 64 who completed the four years received the M.D. degree from 18 different medical schools. This is worthy of note, since the transfer from one medical school to another may create a genuine hardship for some students. It is a pleasure to record that, without exception, the 64 women who have been admitted with advanced standing from West Virginia University School of Medicine to other schools have been successful in completing the work and qualifying for the M.D. degree.

Of the 20 per cent who did not complete the work of the first two years, the reasons for lack of success are not greatly different from those of the men who failed. Heading the list was poor scholarship, due perhaps in some instances to poor preparation in college, unwillingness to apply themselves, or lack of interest in medicine. A few had to withdraw on account of physical illness or emotional instability. In several instances they were married shortly after withdrawing from school. It is quite possible that they withdrew in anticipation of this event. It should be emphasized, however, that most of those who did marry while in medical school married medical students, received their degrees, and entered the practice of medicine.

LOCALITIES OF PRACTICE

Of the 64 women with the M.D. degree, 58 were from families residing in West Virginia at the time of their entrance to medical school. With respect to their locations in the practice of medicine, the great majority have lived in other states since their graduation. An important factor in determining the locality of their practice is the circumstance that all our students have had to attend schools in other states for the completion of their work. The locality and acquaintances during the years of clinical training often play an important part in the selection of a place to practice. The geographic location of the internship or residency training may also be an important influence in this connection. Another factor is that the married woman physician usually locates in an area that is advantageous for her husband. Regardless of the reasons, the state has lost the professional services of many of these capable and earnest women. This is especially unfortunate since, in the scale of physicians per 100,000 population, West Virginia ranks forty-third, or sixth from the bottom.

MARRIAGE AND CHILDREN

By the time the M.D. degree is received, or even earlier, both men and women have reached the age when the urge for marriage and the establishment of a home begins to manifest itself. Here the sex differential becomes a cogent factor in determining the amount and nature of the professional activities of the physicians of the two sexes. It is well recognized that most women who enter the medical profession are by no means devoid of the desire for husband, children, and home. The married female physician may, of course, be forced for a time to stand aside from the responsibilities of medical practice because of pregnancy and the care of young children. These factors obviously place her at some disadvantage.

Of the 64 women with the M.D. degree, as far as we can learn, 45 have married. A few of these were married before entering medical school, and the remainder after receiving the M.D. degree. Twenty-three of the 45 women married men with an M.D. degree. However, some of the remaining 22 seem to have married men in closely allied professions.

It is known that 22 of these women are the mothers of 47 children. Doubtless this figure is not complete. Furthermore, these 45 marriages and 47 children do not represent a total and final score for the 64 women, because the recent graduates still are young women.

TABLE 1

Summary by Decades

Decades	Entered	M.D. Degrees	Married	Children	Deceased	Listed in AMA Directory, 1958	"Not in Practice," 1958	Amount of Practice
Before 1900	1	1	0	0	1	0		1, 50 yr., full time
1900-1909	1	0						
1910-1919	9	7	4	3	3	4	0	7, 28-40 yr., full time
1920-1929	11	9	6	11	2	7	1	6, 23-32 yr., full time; 3, much less than full time
1930-1939	21	17	14	18	1	16	3	13, 15-23 yr., full time; 4, interruptions
1940-1949	30	23	19	11	0	23	5	18, 4-14 yr., full time; 5, interrupted or unknown
1950-1954	7	7	2	4	0	4	1	7, internship and residency training
1955-1958	9	0						
Totals	89	64	45	47	7	54	10	52, full time 12, interrupted 64

In the replies to our questionnaires some of the mothers commented interestingly upon their ambitions for family life, and the relation of the bearing and care of children to their professional careers. Some continued their practice with little interruption during pregnancies and subsequent deliveries, while others suspended practice entirely for a few years while the children were small. One of these women is the enthusiastic mother of five children. She reported continuous practice since graduation, except for a "month's vacation" following the birth of each child.

FIELDS OF PRACTICE OF MEDICINE

In listing the different fields of practice by the women we are limited by lack of definite information about some of them. It is noteworthy that more seemed to be engaged in general practice than in any single specialty. Eighteen stated that they are so engaged and 10 others gave no specialty, so 28 are probably in general practice. Of course, some of those who did indicate a specialty may well be doing some general practice also.

Among the preferred or exclusive fields, obstetrics and gynecology leads with 7. This is followed by anesthesiology with 5; pediatrics, 5; and neuropsychiatry, industrial medicine, disease of the chest, ophthalmology, radiology, internal medicine, and teaching and research, 1 or 2. One stated she was a chemist but gave no further details. Of those in the specialties, 5 were listed in the American Medical Directory as having been certified by specialty boards. A few of the women were engaged in institutional work. It did not appear that many of the women who married physicians are in practice with their husbands, although some of them stated that at times they have assisted their husbands in practice.

AMOUNT OF MEDICAL PRACTICE

It has not been possible to determine exactly the amount of practice of the women, either as to the number of years or its intensiveness. In most cases, however, a reasonably good approximation may be made. On 20 we have no information except from the American Medical Directory, and 3 have graduated so recently that they are not listed in the latest issue (1958).

Table 1 gives a summary, by decades, of the number who entered, their activities, and other pertinent data. The table shows that 52 of the 64 graduates have been in rather active

practice since graduation. For those entering between 1900 and 1920, the years of activity range from 28 to 40 years. In more recent decades, of course, the years of activity become less, until, for those entering from 1940 to 1949, the potential years since graduation range from only 4 to 14. Yet, for these women, sufficient time has elapsed to enable most of them to become rather well established and to do much useful work. Of those in the most recent group (those entering in 1950 and later) some have obviously not had time to become well established in any sort of practice.

Of the 12 whose practice has been far from continuous, 10 are listed in the current American Medical Directory as "not in practice." Some of them are probably in this category only temporarily, although a few were so listed in earlier issues. With respect to those who have not been continuously active, it can hardly be said that their training is of no value, because the medical knowledge and point of view of these women is of use in the home and in the various community activities in which they participate.

Perhaps it should be mentioned here that prior to 1902, before West Virginia University had an organized medical curriculum, it did offer certain preclinical subjects, such as anatomy, physiology, and hygiene. These sciences were accepted by some medical schools for advanced standing. It is noteworthy that in 1899 one young woman took some of these courses, transferred to the Illinois College of Medicine (a school no longer in existence), and was graduated with the M.D. degree in 1903. She then practiced in a small town in West Virginia for 50 years.

In summary, it may be said that Table 1 shows that the amount of professional activity of the group has been considerable, certainly enough to justify amply the admission of these women to the study of medicine. It should be noted, too, that the professional work of these women has not prevented a large percentage of them from enjoying the benefits of marriage and children.

WOMEN'S FEELING ABOUT THEIR PLACE IN PRACTICE

The questionnaires sent to our women alumni included a question about their estimates of the place of women in the practice of medicine, as judged by their observations and experiences. Practically without exception they replied that, in their experience, the practice of medicine was a comfortable and rewarding field for women. They felt that the male physicians manifested no prejudice toward them, and that they were treated with personal and professional respect.

Another question asked whether they would recommend the study of medicine to a daughter or close female friend. The general opinion was that, provided such a young woman had a sincere personal desire to study medicine and also seemed to have the necessary personal qualifications, opportunity should be provided for her to enter that field. They strongly emphasized, however, that the choice should be made by the individual herself, and not on the recommendation or urging of any person or persons.

CONCLUSIONS

From a study of the data, and from our personal knowledge concerning many of the women graduates, it seems evident that they have made a definite and useful contribution to the practice of medicine. The total of their professional activities is considerable, and, as far as can be learned, the quality of their work is of a high order.

In considering the worth of women in the field of medicine, it ought not to be said that they are useful in spite of the fact that they are women, but rather that they have a special area of usefulness because they are women. There are situations, both professional and nonprofessional, in which a woman is perhaps better suited to give understanding service than is a man. It takes many different kinds of doctors in many kinds of professional situations to meet the needs of the many kinds of people.

Letter to Carmen on Being a Physician

Dear Carmen:

About to start your third year in college, you write me that you wish to make a decision regarding a medical career. You have considered the idea since you were in high school and have been taking premedical courses along with your other college work. I know that you have real interest in science and a sincere desire to serve your fellow man. But you hesitate to enter a profession that you believe is traditionally a man's occupation and would like to hear a woman's point of view on some of the questions that are on your mind.

You well know that women are not new in medicine. Since ancient times men and women have collaborated in the practice of medicine. In the Hippocratic oath, Hygeia and Panacea stand beside Apollo and Aesculapius. As you study history you see women through the centuries as practitioners and teachers of the healing art. Their influence on the health of the family has been particularly notable in the fields of preventive and psychosomatic medicine and in the specialties of obstetrics, gynecology, and pediatrics. The very condition of women carries an innate preoccupation with the gift and conservation of life. The vocation of helping the sick is natural to women whose femininity imparts tenderness. This contribution, almost always accepted, has, however, at times been a subject for concern. Those of us who today enjoy the acceptance of our male colleagues and of society can hardly realize the bitter struggles through which the valiant women pioneers of medicine in the United States lived.

The increasing participation of women, away from home, in almost all fields of human endeavor in the whole world causes uneasiness to many, particularly in the case of women who are married and have small children. A recent popular opinion poll in the United States revealed that most persons of both sexes are against women "working," stating in defense of their stand a number of very real drawbacks. The same article, further along, brings out the fact that, if tomorrow all the women in the United States stayed home, the nation would be paralyzed. Among the activities most affected, along with schools, offices, and business, would be medical care. It would be very difficult to run a hospital without its feminine force, including nurses, laboratory technicians, social workers, secretaries, and many others. The participation of women in occupations outside the home is now essential the world over. We have apparently reached a moment in human evolution from which we cannot turn back.

Since it takes planning to do two demanding jobs well, let us ponder some of the points in this situation, focusing them specifically on the medical woman, although they are often applicable to women in other walks of life. There are many fields open to you, many ways to be useful, even if you wish to limit yourself to one of the health fields without necessarily being a physician. The funds and talent that society invests in the making of a physician are considerable. She who contemplates accepting such a precious legacy and enormous responsibility must be reasonably sure that she has certain basic qualities and will be able to adjust in order to perform her multiple duties in the future.

To begin with, she should be sure of her vocation. I know that you feel the

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medical profession is beautiful, as it indeed is, in the sense of moral values, achievements, and satisfactions. I wonder if at your young age you have been sufficiently exposed to human suffering and death to realize that the practice of medicine is often also arduous and painful. Next summer when you come home I want you to spend a few days "practicing medicine" with me. I am hoping that after this test you will still feel that this is "it" for you.

Your vigorous nature and radiant health are an advantage. You possess clear intelligence; this will help you both in professional training and practice and in planning your affairs so that you may function efficiently in your private life. You must learn to be by turns emotionally rigid and flexible: strong and persevering before obstacles, you will need elasticity to judge when to be demanding or tolerant of yourself, when to share or delegate what is not absolutely yours, and when to overlook what is not necessary. You must also cultivate emotional fortitude, the imperturbability and equanimity of which Osler spoke, "without hardening the human heart by which we live."

You would like to be married and have a family of your own someday, but you wonder how compatible is marriage with a medical career. The most complete dedication is possible for the single woman, who will find in medicine many opportunities for the pure sublimation of her instincts. Yet one need not vow celibacy at this altar. Married women enjoy a life richer in experiences, which are translated into greater understanding of human emotions. Marriage and medicine are both based on love and understanding. These attributes are not quantitatively limited; they flourish and multiply when exercised. It is thus possible that she who gives the most of herself may in the long run have even more to offer.

In various cultures and social levels women have delegated part of their maternal and domestic duties. There are so many variables in different family situations that it is impossible to evaluate the effect of various factors on the children. It is undebatable that the care of the family is the primary duty and privilege of the wife and mother. In view of biological and cultural differences, woman cannot and should not play the role of a man. Her contribution in medicine is unique precisely because of these differences. On the other hand, it is not ethical to use them to request special favors and shun responsibilities.

Sociologists in our modern civilization debate up to what point and in what cases is the constant presence of the mother in the home necessary or desirable, how many frustrations are caused by full-time dedication to domestic work, and how these frustrations reflect on the filial relation. In certain stages of life, when the children are small or other circumstances demand it, it may be necessary to limit professional activities. Even though most medical women have devoted themselves to general practice with emphasis on obstetrics, gynecology, and pediatrics, many could find expression for their talents and at the same time render a necessary service in occupations less demanding in terms of time. Among these are academic positions, research work, and some specialties. The arrangements will depend on individual circumstances. For them to be satisfactory, the woman physician needs the physical help and moral support of those about her.

Statistics show that in the United States, among married woman graduates of medical schools, 82 per cent engage in some type of professional activity. Even this figure could be improved through proper guidance of candidates and careful thought and planning of the arrangements possible for graduates. I have no statistics to show this next point, but I am sure that if you look around you will see many children of illustrious women who are themselves worth-while citizens.

I think it is a good sign that so early in your career you have wanted to ask about these things. Surely it is not a soft job that you are considering. I hope my remarks will be helpful though, as you may have suspected, they are weighted by the satisfaction of a useful and stimulating life.

Love,
Dolores

ESTHER C. MARTING, M.D.

Guest Editor

Esther C. Marting, the Director of Junior Membership of the American Medical Women's Association, is the charming and efficient wife of Dr. Howard D. Fabing, the eminent neuropsychiatrist of Cincinnati. They have three children, aged 17, 15, and 13. Dr. Marting plays a prominent part in all their activities, social as well as educational, and is active in school and community functions. By adding the practice of medicine, as a busy radiologist, she exemplifies the fact that good women physicians can be, and often are, excellent wives and mothers.

Dr. Marting, the daughter of a physician, was born in Ironton, Ohio, in 1908, and in 1932 was graduated from the University of Cincinnati Medical School, where her two sisters also received their medical training. After internship and residency in Cincinnati (1933-1935), she studied in Chicago, New York, Baltimore, London, and Paris. In 1937 Dr. Marting returned to Cincinnati and became assistant director of the Cincinnati General Hospital Tumor Clinic; from 1939 through 1943 she was director. During World War II, she was assistant director of the Chicago Tumor Institute. Since 1946 she has been engaged in the private practice of therapeutic radiology.

Dr. Marting is a member of the AMWA, AMA, Ohio State Medical Association, Cincinnati Academy of Medicine (of which she was Secretary in 1950-1951), the American Board of Radiology, the American College of Radiology, and the Ohio State Radiological Society. She is a past president of the Cincinnati Zonta Club and has held numerous offices in the AMWA, beginning with recording secretary, finance chairman, president-elect, and president. Dr. Marting is a dynamic and charming woman, a combination that is not always found in a good executive; she wastes few words and makes every moment of her life count.

She is sponsor of the Esther C. Marting Junior Branch.

Because of her special knowledge of young people, her warm personality, and her ability to demonstrate her willingness to be of service to them, as well as her training in medicine and administration, Dr. Marting is eminently fitted to be director of AMWA Junior Membership.

—Frieda Baumann, M.D.

Medical Briefs

INCREASE IN INFANT DEATHS REPORTED

Dr. M. Kathleen Carney of the Johns Hopkins School of Hygiene and Public Health recently told a meeting of the American Public Health Association that the increasing failure of women to seek prenatal care, the increasing rate of puerperal morbidity, and the increasing number of infants becoming ill and dying during the first few days of life have been associated with the higher mortality rate in Baltimore.

Figures on this increase in infant morbidity were also presented by the Children's Bureau at a meeting of the Association of State and Territorial Health Officers.

The period 1934-1957 showed a definite decline in the number of infant deaths. In 1958, however, the number was 26.9 per 1,000 live births as opposed to 26.4 per 1,000 in 1957. The rise was felt in 31 states, with suburban areas experiencing a 10 per cent higher morbidity rate than in the cities. Deaths from sepsis showed the greatest increase in the neonatal period.

REACTIONS TO TRANSFUSIONS STOPPED

There were no reactions to transfusions in 93 "problem" patients receiving 401 units of blood treated with prednisolone, stated Dr. Frederick M. Offenkrantz, pathologist at Riverside Hospital, Boonton, N.J., before a meeting of the American Society of Anesthesiologists in Miami, Fla., in October, 1959. In 58 of the 93 patients, fever, chills, shock, or jaundice previously had been seen, and in the rest, who had minor incompatibilities, some complications were expected. Fifty to 100 mg. of the corticosteroid, believed protective for 12 hours, was added to the first 500 cc. blood infusion. There were no toxic reactions and no drop in the level of hemoglobin or hematocrit.

Dr. Offenkrantz pointed out that corticosteroids are known to help prevent lysis of erythrocytes in hemolytic anemias and that there have been reports on leukemic patients who are able to tolerate incompletely matched blood if receiving adrenal steroids. He added that prednisolone can also be given intravenously after onset of a transfusion reaction, to reduce its severity.

AGING DUE TO OXYGENATION CHANGE?

Ross A. McFarland, Ph.D., Professor of Environmental Health and Safety at Harvard School of Public Health, reported to the American Psychological Association meeting in Cincinnati in September, 1959, that the cause of the aging process may well be alteration of oxygenation of the tissues. Dr. McFarland pointed to experiments showing that when normal persons and clinical subjects were deprived of an adequate amount of oxygen, their reactions, mental and sensory, were like the behavioral changes seen in the aging. Dr. McFarland also pointed to studies of mountaineers, high-altitude fliers, and others temporarily suffering from lack of oxygen, who showed changes in their entire range of behavior similar to those in senility, including muscular response, reaction time, impairment of sensation, and loss of memory and insight. He also cited the relationship between faulty oxygenation and functions such as immediate recall, concentration span, and insight, and mentioned chronic mountain sickness and progeria as diseases in which such associations exist.

VITAMIN E

Recently, products claiming to be vitamin E dietary supplements have appeared on the market. Since this vitamin is included in ample quantities in the average diet, the Food and Drug Administration has issued a warning to consumers to be aware of such fraudulent advertising.

SYPHILITIC DEATH RATE

The Health Information Foundation has announced that the over-all death rate from syphilis has dropped from 12 persons per 100,000 population in 1943 to 2.2 in 1958. The Foundation attributes the declining death rate to the introduction of antibiotic therapy. They estimate that 1 million persons in this country still remain untreated.

World Health Organization

MIGRATORY BIRDS MAY BE VIRUS CARRIERS

The viruses that strike thousands of persons and animals every year in many parts of the world, causing acute encephalitis and other diseases, may be carried from country to country and from continent to continent by migratory birds, according to a theory advanced at a seminar recently held in Tokyo by the World Health Organization and the Food and Agriculture Organization. A long-term plan to find out whether this theory holds the clue to controlling these diseases was also announced at the Veterinary Public Health Seminar sponsored by the two UN agencies.

The reason the scientists have suggested migratory birds as possible carriers of encephalitis virus is that occasionally strains of the virus causing the disease appear in areas where they do not normally belong. "Japanese encephalitis," for example, has been diagnosed in Malaya, and India has suffered outbreaks of "Russian encephalitis," which first affected monkeys and then man. Strains of both Japanese and Australian encephalitis have been found in Pacific Islands.

One of the possibilities is that migratory birds carry infected ticks or the virus in their blood. To find out, migration routes will be studied and blood specimens taken from birds and man in infected areas. These blood specimens will be stored and, when the scientists know more about the disease, it is hoped that a complete picture of the encephalitis viruses can be formed and a vaccine developed to stop the spread of the disease.

WHO experts at the Tokyo seminar stated that plans are being made by WHO and FAO to have specialists in veterinary and human health from all over the world begin the study in 1960.

INFLUENZA SPREAD IN EARLY MONTHS OF 1959

The WHO has been informed of a spread in acute respiratory infections, influenza, and influenza-like illnesses in a number of countries during the early months of 1959. In Canada outbreaks of acute respiratory infections were reported in five provinces. In India investigations of local influenza epidemics indicated A_2 (Asian) strains to be responsible. The incidence of influenza-like illnesses rose in Switzerland and France; in France localized epidemics later spread throughout the whole country. An epidemic of an influenza-like disease spread among Danish school children; however, adults were relatively unaffected. Serologic examinations showed characteristics of type-B influenza. In England and Wales the number of cases of pneumonia and deaths attributable to influenza rose sharply in January; the illness was widespread throughout the country. Virus A, similar to the Asian group, was isolated in at least six centers; virus B in at least five centers. Serologic tests suggested that most of the outbreaks, particularly among younger persons, were caused by influenza B.

COURSE ON RADIATION PROTECTION

A two week training course on protection from the dangers of radiation was held July 6-July 24, 1959, in the United Kingdom for a group of medical men from 19 countries. The course is being held at Oxford and Harwell by the WHO in co-operation with the British Ministry of Health and Atomic Energy Authority. Since its beginning in Stockholm, Sweden, in 1955, the course has helped 150 health administrators, industrial health officers, public health medical officers, and other public health specialists to acquire a basic knowledge of protection against ionizing radiation.

TUBERCULOSIS FROM ANIMALS STUDIED

The possibility of human beings contracting tuberculosis from dogs, cats, parrots, goats, pigs, and monkeys was discussed at a recent meeting in Stockholm of the Joint WHO/FAO Committee on animal diseases transmissible to man. It was noted that infection with tuberculosis from cattle had become much less frequent in many countries due to systematic application of the tuberculin test and slaughter of all animals reacting to this test. Public health authorities are paying more attention to other animal sources of tuberculosis, and discussions revealed that, although cats are resistant to the human type, dogs, parrots, and monkeys can contract the disease and pass it on. (UNESCO)

President's Message

I have been talking recently with a young woman graduate of the medical school in Karachi, Pakistan. She told me with understandable pride that 30 women had graduated in her class of 100, a proportion that has been present for about 10 years. But, on further questioning I found out that only four or five of these actually entered the practice of medicine. If a woman physician marries she must give up her medical practice. In her country no husband will allow his wife to work.

"But you have access to the women of your country that no male physican can have," I said. "You have opportunities as a medically educated woman to improve immeasurably the status of women and the health of the family. There surely must be some way you could continue to do this without renouncing marriage and the possibility of a home and family."

"Not unless I stay an old maid."

Do you notice in this a similar ring to the complaints in our own country against women studying medicine. "Why not better use this money to prepare a man for a medical career? A woman loses at least 10 years of practice during the years when her children are young."

Dr. Ann Wilkins Appelbaum of the Menninger Clinic discussed at our Midyear Meeting the motivation of women entering the career of medicine. She spoke of individuals of both sexes making this choice as a way of fulfilling their desire to be parents. This is borne out by the fact that a great proportion of women physicians have families of their own and feel that they are both better physicians and better mothers because of this combination of functions.

Indeed, do these years of child-raising need, in our country, to represent complete withdrawal from medical and community contacts and service? Physician-mothers with small children are extremely valuable and influential consultants on P.T.A. committees and in voluntary community organizations such as heart, allergy, poliomyelitis, muscular dystrophy, and other associations. And in looking ahead to the years of re-entry into practice, part-time participation in some type of medical work is indeed necessary. Realizing that this is not always possible without some compensatory remuneration, the AMWA suggested to its branches that a roster of part-time medical employment be made in each city. Now would be an excellent time for us to review this at a meeting. It may point the way for some of the younger women to keep the necessary medical contacts and growth. They, like all mothers, will love their little ones better if they are not bound to them 24 hours of the day. Undoubtedly they can give a better quality of maternal care if they are not frustrated by the quantity demanded, and they can have the stimulation of keeping abreast of medicine and looking forward to the day when they re-enter full practice. It will stimulate and enhance the alertness, judgment, and skill that makes them valuable community leaders among mothers with less preparation.

As I considered this group of medical women, temporarily out of active practice, as well as the responsibility that the branch could assume for them, I was reminded of a proverb that hangs on the wall of the House of Chan in New York:

"Life, like a cookie jar, would soon be empty if you continued to accept the good things it offers, and put no good things in return."

What better motto could each AMWA member accept as her own in 1960?

Jessie Laird Brodie M.D.

American Medical Women's Association, Inc.

TENTATIVE PROGRAM

1960 ANNUAL MEETING

June 9-12, 1960

The Carillon Hotel
68th to 69th Street
Miami Beach, Fla.

Thursday, June 9

Committee Meetings
10:00 a.m.–Executive
1:00 p.m.–Finance
7:00 p.m.–Executive
Others as called by their chairmen
Evening tour of Miami Beach

Friday, June 10

9:00 a.m.–General business session
12:00 noon–All resolutions to Reference Committee A
12:30 p.m.–Luncheon
2:30 p.m.–Tour of clinical facilities and programs
7:00 p.m.–Dinner
8:30 p.m.–Speaker: Leonard Larson, M.D., Chairman, Board of Trustees of AMA

Saturday, June 11

9:00 a.m.–General business session
11:00 a.m.–Reading of resolutions
12:15 p.m.–Lunch
2:00 p.m.–Scientific Assembly
Debate: "Should the Older Person Live with His Children?"–high school debating team
4:00 p.m.–Hearing on resolutions
6:00 p.m.–Hospitality hour
7:00 p.m.–Inaugural banquet
Inaugural Address: "A Modern Day Challenge–Disability"–Claire F. Ryder, M.D.
Presentation: Elizabeth Blackwell medal

Sunday, June 12

9:00 a.m.–General business session
12:15 p.m.–Luncheon
2:00 p.m.–Scientific Assembly
Preview 1960-1961 program
Panel: Prevention and Control of Disability"–Nila K. Covalt, M.D., moderator

Of Special Interest

REHABILITATION SERVICES NOT FULLY USED

"At least 2 million physically disabled and handicapped persons, now unemployable and often public charges, could be effectively rehabilitated if more people know about the extent of the rehabilitation services available in this country," said W. Scott Allan, Manager of the Medical Services Division of Liberty Mutual Insurance Company, speaking in May, 1959, before a rehabilitation forum, part of the Pittsburgh bicentennial celebration.

Citing a survey of physicians, conducted by the Graduate School of Health of the University of Pittsburgh, in which 49 per cent of those interviewed gave lack of facilities as the chief reason patients were not receiving rehabilitation, Allan stated that very few existing rehabilitation centers were operating at full capacity and that too few patients were being referred to such centers.

Allan pointed out that the overwhelming economic advantages of rehabilitation have never been clearly understood. "While the altruistic and humanitarian values of rehabilitation must continue to be emphasized, the average individual will respond more readily to the pinpointing of actual cost savings and general improvement in work and earning potential that can be gained from an expanded program of rehabilitation." He also stated that estimates of the number of handicapped individuals who could benefit from rehabilitation run between 23 and 28 million and that about 25,000 more are becoming seriously disabled every year. Of this group, only 75,000 were rehabilitated during the 1958 state-Federal program. "Two billion dollars are lost each year through disability. In addition, large numbers of disabled workers are on relief rolls. Approximately 20 per cent of the nearly 75,000 workers rehabilitated in 1958 were costing taxpayers 13 million dollars annually. To offset these costs, this same group will earn about 25 million dollars" plus pay sizable amounts in state and Federal taxes.

INTENSIVE TREATMENT CENTERS IMPROVE MENTAL PATIENTS

The first 15 months of a state-supported program in Georgia for treatment of mental patients in psychiatric wards of local hospitals has resulted in the hospitalization of 333 patients, many of whom would otherwise have been committed to a mental institution. These patients were selected on the basis of their being "medically indigent" or unable to pay for expensive but necessary hospitalization and were those who, in the judgement of a psychiatrist, needed to be hospitalized and would probably profit from brief hospital treatment.

Services to mental patients in the hospitals are purchased by the State. The hospital part of the program is the responsibility of the hospital and professional staff. Processing of applications, service to families, and follow-up services to patients after discharge from the hospital are handled by the local health departments, with the co-operation of family physicians and others responsible for the readjustment of the patient. However, the major responsibility of the individual patient and his family is stressed at all times.

NEW ISOTOPE CENTER

One of the most important purposes of the new 1 million dollar center, built by Picker X-Ray Corporation in Cleveland, will be to process and package radioisotopes for medical and industrial users throughout the world. The center will also do extensive research on the processing and packaging of isotopes.

The radioisotope laboratory is equipped for quick processing and packaging of almost any radioisotope in quantities up to a million curies of cobalt^{60} or its equivalent. In addition, storage facilities for some 100,000 curies of isotopes are provided in 54 vertical storage tubes, which can be safely and quickly moved to the cell in transfer containers.

The main products of the laboratory during the first year of operation will be sources for the teletherapy equipment Picker X-Ray manufactures. In addition, the center will fabricate many industrial radiography sources.

Other research and development will be carried on with image-forming systems for radiography; x-ray heads, controls, and generating equipment; image-amplifying methods for low-dose fluoroscopy; and cineradiography and nuclear instrumentation.

Opportunities for Women in Medicine

AWARDS

Medicine. The Mississippi Valley Medical Society is accepting unpublished manuscripts that will be of interest to general practitioners. Physicians who are members of the AMA and who are residents and citizens of the United States may contribute papers not longer than 5,000 words and in five complete copies. The winning essay will be read before the annual meeting of the MVMS and the author will receive a cash prize of $100, a gold medal, and a certificate. Manuscripts should be submitted before May 1 to the Secretary, MVMS, 209-224 W.C.U. Bldg., Quincy, Ill.

National Security. The Mershon Committee on Education in National Security of the Ohio State University has announced the award of $2,500 for the best book-length manuscript on national security. Any aspect of the problem—economic, political, ideological, scientific, diplomatic—may be considered by the applicant. For details on requirements and form write to Mershon Committee, Ohio State University Press, 164 W. 19th Ave., Columbus 10, Ohio. Manuscripts must be submitted by April 1. The winning work will be published and the winner will receive royalties.

CAMP PHYSICIAN

Established Vermont girls' camp, July and August, or either—$900 for full season. Write Herbert Brill, 50 Broadway, New York City 4.

COURSES

Chest. The 13th Annual Postgraduate Course on Diseases of the Chest will be held at the Sheraton Hotel, Philadelphia, March 14-18. Recent advances in the diagnosis and treatment of heart and lung diseases, both medical and surgical aspects, will be presented, including round-table luncheon discussions. The tuition is $100. For information write to the Executive Director, American College of Chest Physicians, 112 E. Chestnut St., Chicago 11.

Clinical Pathology. The New York University Post-Graduate Medical School is offering a part-time course in Clinical Physiology: Applications of Basic Physiology to Diagnostic and Therapeutic Problems from March 3 to April 21, Thursdays, 7:30-9:30 p.m. For information write to the Office of the Associate Dean, NYU Post-Graduate Medical School, 550 First Ave., New York City 16.

Electrocardiography. The Harvard Medical School will hold EKG clinics for five days, April 26-29, and every Wednesday afternoon, March 2-May 11. The tuition is $150 and applications may be obtained from the Assistant Dean, Courses for Graduates, Harvard Medical School, Boston 15.

Internal Medicine. The University of Michigan has begun 22 postgraduate courses designed to keep practicing physicians abreast of current medical developments. Those courses still open for registration are: Rheumatology, March 2, 3, 4; Pulmonary Diseases, March 14, 15, 16; Allergy, March 14, 18, 19; Diseases of the Heart, March 21-25; and Electrocardiographic Diagnosis, March 28-April 1.

Ophthalmology. The New York University Post-Graduate Medical School is offering the following courses in ophthalmology: Motor Anomalies of the Eye (for specialists), full-time, March 7-12 and March 14-18; Ocular Expressions of Systemic Disease, part-time, 2-5 p.m., March 21-25; Surgery of the Eye (for specialists), full-time, March 28-April 2; Ophthalmoscopy, part-time, 9 a.m. to noon, April 25-29; and Histopathology, part-time, 1-4 p.m., April 25-29. For applications and additional information write to the Office of the Associate Dean, NYU Post-Graduate Medical School, 550 First Ave., New York City 16.

EXAMINATIONS

Change in Schedule. The National Board of Medical Examiners has revised its 1960 examination schedule to read as follows: Part II, April 26-27; Part I, June 21-22, and Sept. 7-8.

MEETINGS

Bronchoesophagology. The American Broncho-Esophagological Association will hold a meeting March 15-16 at the Deauville Hotel in Miami Beach, Fla. For information write to Dr. F. Johnson Putney, 1712 Locust St., Philadelphia 3.

ENT. The American Laryngological, Rhi-

nological and Otological Society will meet in Miami Beach, Fla., March 15-17. Further information can be obtained by writing to Dr. C. Stewart Nash, 708 Medical Arts Bldg., Rochester 7, N.Y.

Forensic Medicine. The American Academy of Forensic Sciences will meet at the Drake Hotel, Chicago, March 3-5. Information and arrangements may be obtained from Dr. W.J.R. Camp, Secretary-Treasurer, 1853 W. Polk St., Chicago 12.

Gastroscopy. The American Gastroscopic Society will meet March 30 in New Orleans. For information write to Dr. Arthur M. Olsen, Mayo Clinic, Rochester, Minn.

General Practice. The American Academy of General Practice will hold its 12th Annual Scientific Assembly, March 21-24, in Philadelphia's Convention Hall. The program will include discussions by 31 prominent medical educators and visits to more than 100 scientific and 300 technical exhibits. Information may be obtained from Mr. Mac F. Cahal, Executive Director, the Academy, Volder Boulevard at Brookside, Kansas City 12, Mo.

History of Medicine. The American Association for the History of Medicine, Inc., will convene in Charleston, S.C., March 24-26. Further information can be obtained from John B. Blake, Ph.D., c/o Smithsonian Institution, Washington 25, D.C.

Laryngology. The American Laryngological Association will hold its meeting in Miami Beach, Fla., March 18-19. Arrangements can be made by contacting Dr. Lyman Richards, Massachusetts Institute of Technology, Cambridge 39, Mass.

Medicine. The Missouri State Medical Association will meet at the Sheraton-Jefferson Hotel, St. Louis, March 13-16. Details can be obtained from Mr. T. R. O'Brien, 634 N. Grand Blvd., St. Louis 3.

Multiple Sclerosis. The National Multiple Sclerosis Society will meet in New York City on March 8. Information can be obtained by writing to Mr. Donald Vail, 257 Fourth Ave., New York City 10.

The Nation's Health. The National Health Forum of the National Health Council will meet March 13-18 at Miami Beach, Fla. Information can be obtained from Mr. Philip E. Ryan, 1790 Broadway, New York City 19.

Neurosurgery. The Neurosurgical Society of America will meet at Del Mont Lodge, Calif., March 30-April 2. Details can be obtained from Dr. Raymond K. Thompson, 803 Cathedral St., Baltimore 1.

Plastic Surgery. The American Otorhinologic Society for Plastic Surgery will meet in Miami Beach, Fla., March 6-13. Details can be obtained from Dr. Joseph G. Gilbert, 75 Barberry Lane, Roslyn Heights, N.Y.

Psychosomatic Medicine. The American Psychosomatic Society will meet in Montreal, March 26-27, at the Sheraton-Mount Royal Hotel. Further information may be obtained from Miss Joan K. Erpf, 265 Nassau Rd., Roosevelt, N.Y.

Radiology. The American Radium Society will convene in San Juan, Puerto Rico, at the Caribe Hilton Hotel, March 17-19. Arrangements may be made by writing to Dr. Robert L. Brown, Robert Winship Clinic, Emory University, Atlanta 22, Ga.

Surgery. The Southeastern Surgical Congress will convene March 21-24 at the Roosevelt Hotel in New Orleans. For details write to Dr. B. T. Beasley, 1032 Hurt Bldg., Atlanta 3, Ga.

Surgery. The Southwestern Surgical Congress will meet March 28-31 at the Riviera Hotel, Las Vegas, Nev. Details can be obtained from Miss Mary O'Leary, 1213 Medical Arts Bldg., Oklahoma City, Okla.

PAPERS REQUESTED

Ultrasonics. The second international conference of the American Institute of Ultrasonics in Medicine is now considering papers to be presented at its meeting on Aug. 20 at the Statler-Hilton Hotel in Washington, D.C. Abstracts not longer than 250 words should be sent to Dorothy M. Stillwell, M.D., Chairman, Department of Physical Medicine and Rehabilitation, University of Colorado Medical Center, Denver 20.

Medical Science. The Seaside Memorial Hospital will hold the Second Annual Scientific Symposium of the Medical Staff in Long Beach, Calif., on May 4. The symposium has adopted the theme, "New Horizons in Medicine." Further information may be obtained from Dr. George X. Trimble, Director of Medical Education, Seaside Memorial Hospital of Long Beach, Calif.

News of Women in Medicine

The research of Dr. Margaret J. Albrink at Yale University, New Haven, Conn., on triglycerides ("neutral fats") indicates that measurement of their level in the blood stream may be a more sensitive indicator of atherosclerosis than the better-known cholesterol. Dr. Albrink, working with Dr. Evelyn B. Man, developed a technique for measuring the triglycerides, which is suitable for use in hospital laboratories. The work is supported by the American Heart Association.

Dr. Leona Baumgartner, Commissioner of Health for New York City and President of the American Public Health Association, spoke at the first general session of the New York State Department of Health's 55th Annual Health Conference at Lake Placid in May, 1959. Her topic was "Practice of Health in Our 1959 World."

At the annual meeting of the Texas Medical Association in San Antonio, April, 1959, Dr. Lois Cowan Collins of Houston made a film analysis—"Roentgenographic Examination of the Chest"—in a refresher course on the subject. Dr. Mary Ellen Haggard of Galveston spoke on "Idiopathic Thrombocytopenic Purpura in Infancy and Childhood" in the Section on Pediatrics.

Dr. Nadene Coyne, formerly Director of the Department of Physical Medicine and Rehabilitation, Cleveland General Hospital, was appointed in February, 1959, co-ordinator of training for physicians in the department of physical medicine and rehabilitation at New York University-Bellevue Medical Center and director of the Respirator Center at Goldwater Memorial Hospital, New York City. Dr. Coyne will be in charge of supervising and planning the training programs, which consist of patient care, clinical studies, lectures, and specialized research.

Drs. Lois Day and Barbara Fry of Seattle are members of the Medical Advisory Committee of the new voluntary agency, Planned Parenthood Center of Seattle, Inc.

Dr. Thelma Dunn, Chief of the Cancer Induction and Pathogenesis Section of the Laboratory of Pathology, National Cancer Institute, has been chosen Woman of the Year by the Women's Medical Society of the District of Columbia. She was honored at the Society's dinner in April, 1959. Dr. Dunn, an AMWA Woman of the Year for 1958, was recently appointed to the Board of Directors of the American Association for Cancer Research, and was elected to the presidency of the Washington Society for Pathologists.

Serving on commitees of the 1960 White House Conference on Children and Youth are Drs. Martha M. Eliot of Washington, D. C., Finance, and Leona Baumgartner of New York City, Studies.

Dr. Grace A. Goldsmith, Professor of Medicine at Tulane University School of Medicine, New Orleans, was presented with both the Osborne-Mendel award and the Borden award for outstanding research in nutrition at the annual meeting of the American Institute of Nutrition. She received the award for her contributions in the field of macrocytic anemia, studies on the relationship of tryptophan and niacin, and work in the field of protein malnutrition.

At the Texas Medical Association's annual meeting, San Antonio, April, 1959, Dr. Goldsmith was a guest of the Association and the Texas Diabetes Association. She was sponsored by Dr. Marie D. Gordon of San Antonio. Dr. Goldsmith spoke on "Management of Obesity" and participated in a panel discussion of atherosclerosis in the Section on Internal Medicine. At the concurrent meeting of the Diabetes Association, she gave two talks—"The Importance of Proper Nutrition in the Treatment of Diabetes" and "Dietary Fat and the Atherosclerosis Problem of the Diabetic"—and was part of a panel discussing "The Role of Diet in Diabetes."

Drs. Ruth Guttman and Edith E. Sproul of the Francis Delafield Hospital, New York City, participated in local programs of postgraduate education in May, 1959. Dr. Guttman spoke on "Radiotherapy in Carcinoma of the Breast" at a Cancer Teaching Day sponsored by the Utica Academy of Medicine and the Medical Society of the County of Oneida; Dr. Sproul, Pathologist at the Hospital's Institute of Cancer Research, took part in a

Clinical Pathological Conference held by the Hospital.

Dr. Katherine Hendry of Pierce, Ga., was the 1959 president of the Ware County Medical Society; Dr. Vilda Shuman of Waycross was vice-president.

Dr. Joan K. Jackson of the Department of Psychiatry at the University of Washington, Seattle, has been appointed by the state governor to the Advisory Board of a pilot outpatient clinic for alcoholics. Dr. Jackson participated in a recent Governor's Conference on Alcoholism in Tacoma, Wash.

Officers for 1959 of Texas county medical societies included Drs. Joanne Kenner of Mineral Wells, board of censors; Blanche McCaw of San Angelo, board of censors; and Gail Medford of Lufkin, delegate. Dr. Medford is on the State Board of Councilors of the Texas Medical Association; she also serves on the Council on Medical Economics.

The following six women physicians were awarded fellowships in the American College of Surgeons: Charlotte Herman Kerr, Chicago; Elisabeth Pickett and Lucie Schoenenberger, New York City; Nellie M. Santiago-Starpoli, Poughkeepsie, N. Y.; Dorothy L. Brown, Nashville, Tenn.; and Mary Witt Hughes, Texarkana, Texas.

The American Hospital Association, at its 61st annual meeting in New York City in August, 1959, elected Dr. Hilda H. Kroeger as a trustee to fill the two year unexpired term of the president-elect. Dr. Kroeger is the administrator at the Elizabeth Steel Magee Hospital, Pittsburgh.

Dr. Mary Agnes Lancaster of Dallas has been appointed to the Texas Board of Examiners for Ophthalmic Technicians. Her term expires in 1960.

The first woman pathologist ever to work in the Harvard crime laboratory is Dr. Betty Jane McClellan of North Little Rock, Ark. She performs autopsy examinations and has amazed the medical examiners and police officers with her explanations of suspicious deaths. Dr. McClellan is completing her second year of internship at Massachusetts General Hospital and after its completion may go into research.

Dr. Jessie Marmorston, Professor of Medicine at the University of Southern California School of Medicine, Los Angeles, addressed the American Dietetic Association's forty-second annual meeting in August, 1959. Her topic concerned the relationship between diet in youth and atherosclerosis in adult years. Dr. Marmorston was also featured in the "Medical Distaff" column of the Aug. 26 issue of *Scope Weekly*. *Scope* discussed a research project, supported by the National Heart Institute and private funds, in which Dr. Marmorston is engaged. The basis of the research is the establishment of a relationship between estrogen levels and cardiovascular problems. The experiments so far tend to support Dr. Marmorston's theory that estrogen therapy lowers serum phospholipids, cholesterol, and other serum lipid fractions to normal levels without producing significant side effects.

Dr. Marmorston's life has added interest because of the nature of her husband's profession. Lawrence Weingarten, a Hollywood movie producer, values his wife's opinion of movie manuscripts and he in turn spends time scanning her medical journals, from which he has been able to develop ideas for his movies. He has become known in the film industry as one of the best informed men on medical literature, and frequently accompanies his wife to medical meetings, is a member of the Society for the History of Medicine, and often finds himself very busy raising funds for medical research and education.

Dr. Marmorston considers medicine the greatest profession for women. The Marmorston-Weingarten team have living evidence of their mutual respect for the practice of medicine—their oldest daughter is now a senior resident in a Los Angeles Hospital.

A letter from Dr. Ella A. Mead of Greeley, Col., in which her experiences with a 1906 Maxwell automobile were described, formed part of a prize-winning exhibit, "Old Doc, First Auto Test Driver," at a recent meeting of the Illinois State Medical Society.

Dr. Jeannette C. Miller of Massillon was honored for her 50 years in medical practice by the Stark County, Ohio, Medical Society.

Dr. Emma S. Moss, Director of the Department of Pathology, Charity Hospital of Louisiana, New Orleans, instructed a workshop

on mycology at the annual convention of the American Society of Medical Technologists, held in Phoenix, Ariz., in June, 1959.

Dr. Deborah Partridge was appointed for a one year term to the President's Citizens Advisory Committee on the Fitness of American Youth.

Dr. Ruth Rivard of Millville, Md., has resigned her post as head of the local Cancer Society's Public Education Committee.

The following Maryland women have served as guest speakers to local groups in recent months: Dr. Sarah Tenenblatt of Silver Springs, at the Randy-Lions Auxiliary meeting in Franklin Park; Dr. Caroline B. Thomas of Baltimore, at the Montgomery County Tuberculosis and Heart Association; and Dr. Elizabeth A. Winiarz of Cambridge, at the Anne Arundel Public Health Lay Council and at the Council for Exceptional Children.

Miss Doris Thompson of Lake Charles, La., was 1 of 11 students at the University of Michigan Medical School, Ann Arbor, selected to report on her own research at the fifth annual Medical Student Research Forum held at the University Hospital in February, 1959.

Dr. Gloria Torres of New York City and two colleagues discussed "The Effect of Intermittent Positive Pressure Breathing on Intra-Pulmonary Mixing in Pulmonary Emphysema" as part of a symposium presented by the New York Society for Thoracic Surgery in May, 1959.

Dr. Beatrice E. Tucker of Chicago and Dr. Harry B. W. Benaron spoke on "The Effect of Anoxia During Labor and Immediately Following Birth on the Subsequent Development of the Child" at a clinical meeting held at Michael Reese Hospital in Chicago by the Chicago Gynecological Society in April, 1959.

Dr. Helen M. Wallace, formerly of Minneapolis, has been appointed chief of professional training, Division of Health Services, Children's Bureau, Washington, D.C. The position is a new one and involves responsibility for the training of professional personnel concerned with the care of mothers and children.

AWMA PRESENTS . . .

One of the lovelier things to happen to medicine in this country was the importing of 27 year old Dr. Maria da Graca de Campos Andrada of Lisbon, Portugal. She came here as the first Pfizer Fellow in Physical Medicine and Rehabilitation for Portuguese physicians, and will remain here for one and a half to two years studying in various centers throughout the country. She has an especial interest in children and has already been invited to participate in the pediatric program of a rehabilitation center now under construction in Lisbon.

At the time of this interview Dr. Andrada was at Goldwater Memorial Hospital on Welfare Island, which is in New York City's East River. Although there is no pediatric program in this hospital, there is a good opportunity for vast experience in general rehabilitation.

Being a female physician from Portugal is not at all unusual. Many women there hold medical degrees because the universities do not have provisions for the study of submedical specialties, and so a student interested in a field such as psychology must first go through the course of study for psychiatry.

Dr. Andrada was rather overwhelmed with the physical aspect of New York City, and so she gravitated toward the more country-like atmosphere of Central Park and Riverside Drive. She has a feeling for modern art and has enjoyed the collections on exhibit at the museums here, and, although she has not yet visited the controversial Guggenheim Museum, she is awaiting the opportunity.

Among her other enjoyments she includes swimming at the many beautiful beaches on the coast of Portugal and an appreciation of music, ballet, theater, and literature.

Book Notices

Editor's Note: These reviews represent the individual opinions of the reviewers and not necessarily those of the members of the Editorial Board of the JOURNAL.

PHYSIOLOGY OF THE NEWBORN INFANT. By Clement A. Smith, M.D., Associate Professor of Pediatrics, Boston Lying-In Hospital, Harvard Medical School, Boston. Third Edition. Pp. 497, with 52 figures. Price $12.50 (cloth). Charles C Thomas, Publisher, Springfield, Ill., 1959.

Companion in format to its predecessors, this 1959 monograph compresses into its 2.5 lb. the bulk of physiological knowledge of the newborn infant culled from 1,355 scientific references. Listing all of these numerically and alphabetically under the authors' names at the back of the book is a handy innovation. In reading the text, however, the full-size reference numbers, though in parentheses, can be confused with numerals in the scientific data.

The author has processed all this material and the results of his own experience with what the late Prof. Frederick Irving, in his foreword to the first edition, refers to as "his characteristic scientific attitude and verbal clarity." It is too bad these could not yet be applied to a chapter on the Nervous System.

For the browsing reader, section headings strategically placed offer attractive signposts. For students, the "normal values" printed inside the back cover show the practical application of the text's statistics and diagrams. The author challenges research workers with references to "gaps in our present knowledge."

The clinical summaries concluding each chapter enlighten the interested practitioner to such an extent as to make this a "best buy" at $12.50.

—Jean Gowing, M.D.

CIBA FOUNDATION SYMPOSIUM ON THE CEREBROSPINAL FLUID (Production, Circulation and Absorption). Editors for the Ciba Foundation, G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Cecilia M. O'Connor, B.Sc. Pp. 335, with 141 illustrations. Price $9.00. Little, Brown and Company, Boston, 1958.

This symposium was held in London in May, 1957, and brought together outstanding international investigators to discuss the multifaceted subject of cerebrospinal fluid. The participants recognized that embryologic, anatomic, histological, and neurochemical aspects had to be reckoned with before focusing on clinical and clinicopathological aspects of the cerebrospinal fluid circulation.

Both formal papers and discussions are fairly technical and presuppose a basic knowledge in the general field. Interesting subjects, such as hypovitaminosis and hypervitaminosis, kernicterus, hydrocephalus, and experimental spinal anesthesia are included. The reader is also rewarded by the formulation of many still unsolved puzzles, especially with reference to fluid absorption and to the complex concept of the blood-brain barrier.

This book is recommended primarily for those interested in the advancement of knowledge in the field of neurological investigation.

—Luiga Norsa, M.D.

BEGINNINGS OF EMBRYONIC DEVELOPMENT: Symposium of American Association for Advancement of Science, Section on Zoological Sciences, co-sponsored by American Society of Zoologists and Association of Southeastern Biologists. Edited by Albert Tyler, R. C. von Borstel, and C. B. Metz. Pp. 408, with 132 illustrations. Price $8.75. The American Association for the Advancement of Science, Washington, D.C., 1957.

This book is composed of scientific papers relating to problems of early development and the initiation of development, which were presented at a symposium on "Formation and Early Development of the Embryo," held in 1955 at the Second Atlanta Meeting of the AAAS. The book includes other pertinent articles, making a total of 13 papers.

Each article, written as a scientific paper, includes extensive introductory background material, detailed descriptions of specific experiments, discussion of problems, a summary, and a reference list. The accounts of specific research endeavors are of restricted interest, but the introductory material provides a superficial running account of the whole stage of development under consideration and thereby will be of interest to any biologist. Extensive reference sections, sufficient illustrations, and a good index add to the value of the work.

Although there is no strict organization of the book and only a few aspects of early development are considered in detail, there is no lack of unity or unnecessary overlapping of material. Most of the latest relevant biological and biochemical concepts are touched upon in some manner. The first paper deals with the differentiation of the oocyte, the next five with the role of the sperm and other aspects of the initiation of development, and the remaining seven with problems of development just subsequent to fertilization. The book does not discuss later de-

velopment as such but the assumption is made that later events tend to follow patterns established during the earlier stages.

—Valerie Y. Knowlton, Ph.D.

CAMDEN COUNTY MEDICAL SOCIETY 1846-1956: History of Camden County Medical Society, the Hospitals of Camden County, and Biographical Sketches of the Society Members Past and Present. Pp. 151, with illustrations. Printed for the Camden County Medical Society by Sinnickson Chew & Sons, Co., Camden, N. J., 1957.

This book is an example of the meticulous work characteristic of many fine women physicians when they see the need for compiling historical information. As Dr. Helen F. Schrack, the historian, points out in the preface, "Accurate information about people is soon lost or forgotten unless it is put into writing."

The members of the History Committee and the many who co-operated with them may be justly proud of the fine reference volume they have produced. Not only have the records and biographies been preserved for future reference but stimulus, Dr. Schrack hopes, has been given to others who will carry on this important work in the future, not only for Camden County in the State of New Jersey but for other areas.

—Ida J. Draeger, Librarian
Woman's Medical College
of Pennsylvania

MODERN TREATMENT YEARBOOK 1958. (A Yearbook of Diagnosis and Treatment for the General Practitioner). Edited by Sir Cecil Wakeley, Bt., K.B.E., C.B., L.L.D., M.Ch., D.Sc., F.R.C.S., F.R.S.E., F.R.S.A., F.A.C.S., F.R.A.C.S., Fellow of King's College, London; Consulting Surgeon, King's College Hospital and to the Royal Navy; Senior Surgeon, Royal Masonic Hospital; Examiner in Surgery to the University of Cambridge; formerly Examiner to the Universities of London, Glasgow, Durham, Sheffield, Wales, and Ireland; and Editor of the "Medical Press." Pp. 312, with 9 illustrations. Price $6.00. Williams and Wilkins Company, Baltimore. Published for the "Medical Press" by Bailliere, Tindall and Cox, Ltd., London, 1958.

Surely it would be impossible for an American to review this "yearbook" without drawing comparisons to our own. This book is written in informal textbook style, with a running description of current treatment of a wide variety of subjects. A page of the table of contents selected at random is an example: "8. The Treatment of Dropsy; 9. Modern Views of Antenatal Care; 10. Barbiturate Poisoning; 11. The Management of Paralysis in the Home; 12. The Diagnosis and Treatment of Early Cancer of the Cervix; 13. Trigeminal Neuralgia; 14. The Breast." As can be seen from this example, the book is constructed without reference to body systems, pathological divisions, or authorities writing the text. There seems no general plan. The literature of the previous year is not reviewed per se; the bibliographies (surprisingly brief) go back 30 years and more. Therapeutic topics are listed and discussed at random, totally without classification, and are selected either as symptoms, clinical entities, or body areas. There are no studies of modern pharmaceutical adjuncts—and there is probably no more active or complex branch in modern medicine.

All this does not mean, however, that this is not an interesting book. To anyone concerned in any degree with modern therapy, this is an intriguing book, although for some purposes its discussions are superficial. Its value would be not for the highly specialized practitioner but for the one of broad interests and curiosity, for there must be hardly a subject in modern medicine, from cardiac states to parasitic infestations, that is not somehow touched upon by the text.

—Josephine A. Girard, M.D.

MY MINDS AND I. By E. V. Crane, Ph.B., M.E., P.E. Foreword by Dr. Richard Kenneth Compton. Pp. 269, with 13 illustrations. Price $4.00 (cloth). The Christopher Publishing House, Boston, 1957.

Mr. Crane must be admired both for the exhaustive study he has made of anatomy, physiology, philosophy, and religion and for his motivation to bring to others the insights he derived concerning the relationship between spiritual, physical, and mental well-being which enabled him to overcome many of his psychosomatic disorders.

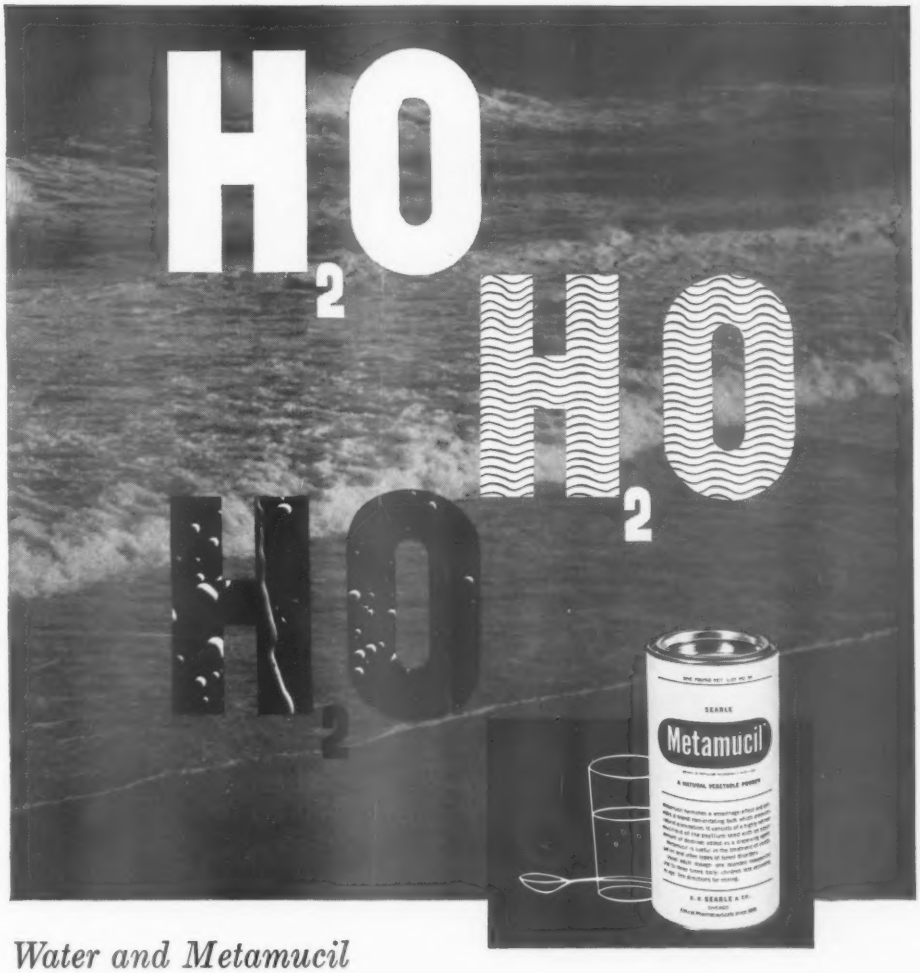
With experience gained in engineering research, he correlates the data he has assembled to depict all the functions of an individual in terms of an electrical engineer, assigning even such intangibles as instinct, intuition, and inspiration to specific anatomic areas. To a physician it may be a bit tedious to wade with him through the factual background of autonomic, cerebral, endocrine, and other functions, but this may be less true of the nonmedical reader who is less familiar with the subject.

When he is relating his personal experiences, Mr. Crane charts a path that others may follow and that may lead to a better understanding and application of spiritual values in the solution of their own problems.

This is not a book for light reading, and it will only be enjoyed by one who likes mental calesthenics. Nevertheless, whether one likes it or agrees with it, it does explore the complex physiological forces that influence the mental, spiritual, emotional, and physical behavior of human beings in a unique manner. Whether further research will confirm or disprove the specific areas he designates as the physiological centers of spiritual and intuitive perception is of less importance than the fact that these faculties are part of human equipment (though often taken for granted) and could, if they were better understood, be made to serve more fully to increase the health and efficiency of those who learn to properly use these resources.

The few inaccuracies encountered in the book can easily be overlooked since they do not detract materially from the value of the thesis. While these could readily be corrected in future editions, it would seem more important to delete some of the repetitions and shorten and simplify the volume to a point where the enlightened reasoning and valuable insight and ideas would reach a greater number of people than those to whom the present version would have appeal.

—Elizabeth S. Kahler, M.D.



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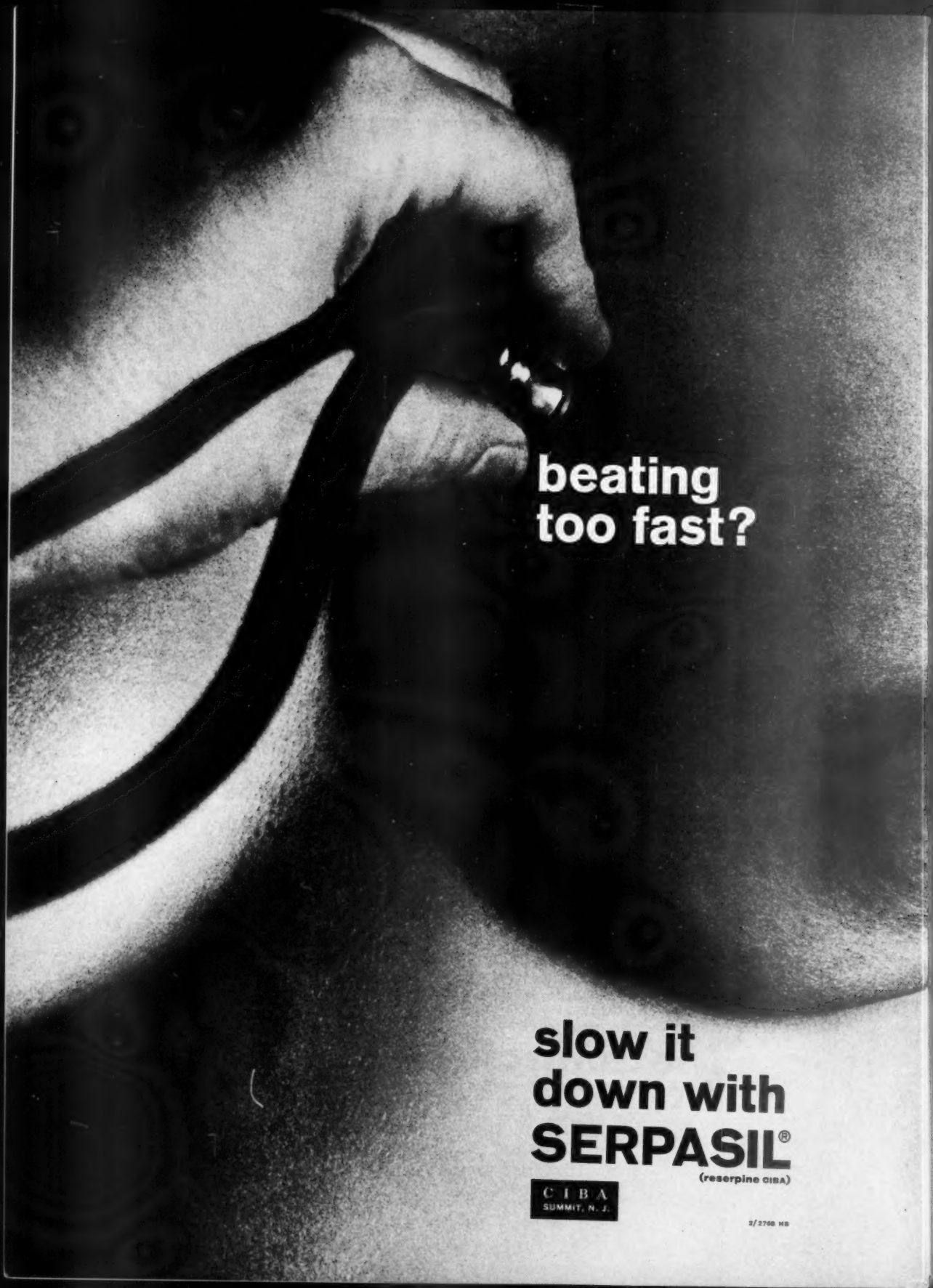
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(Continued on page 192)

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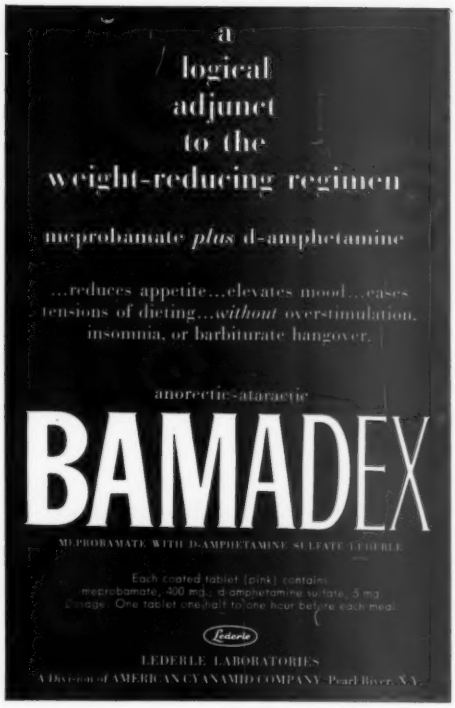
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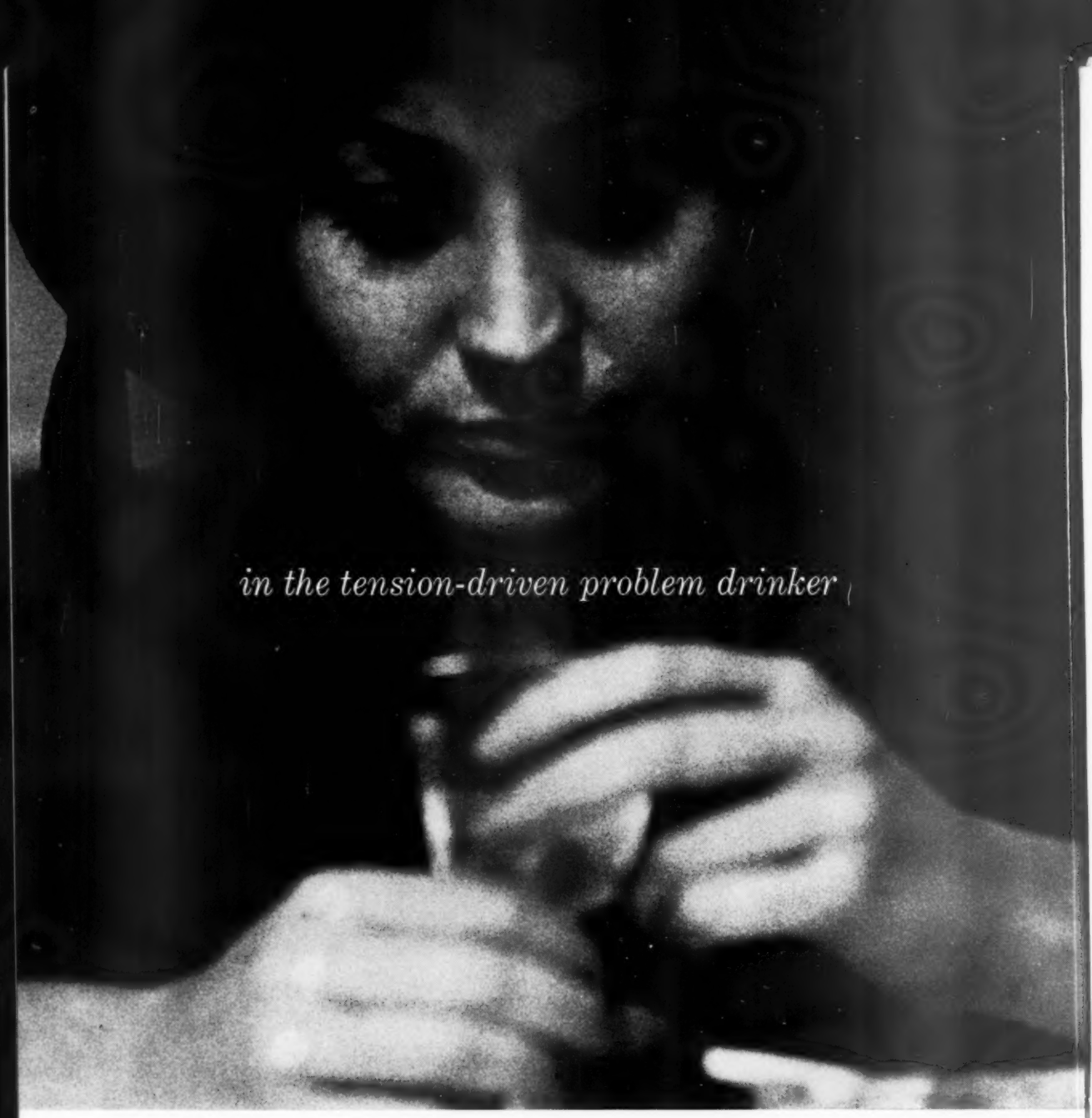

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2. A. M. A. Council on Drugs: New and Nonofficial Drugs, J. A. M. A. 171:891, 1959.
3. A. M. A. Committee on Toxicology: Accidental Iron Poisoning in Children J. A. M. A. 170:676, 1959

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1-11. Papers read at Seventh Symposium on Antibiotics, Washington, D. C., November 4-6, 1959.

12. Phillips, F. M.: DECLOMYCIN—Seventh Interim Report. Department of Clinical Investigation, Lederle Laboratories, Pearl River, N. Y., December 4, 1959.

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performance

genitourinary infection. Roberts, M. S.; Seneca, H., and Lattimer, J. K.,[1] New York, N. Y.—Ninety-one per cent of the Gram-positive and 27 per cent of the Gram-negative, among 66 organisms cultured from genitourinary infection, responded to DECLOMYCIN. Serum antibiotic activity was found three times greater than with tetracycline.

toleration. Boger, W. P., and Gavin, J. J.,[2] Norristown, Pennsylvania—Side effects with DECLOMYCIN were minimal. When dosage was 0.5 to 1 Gm. daily in divided doses, only two of 82 patients exhibited nausea.

activity level sustentation. Kunin, C. M.; Dornbush, A. C., and Finland, M.,[3] Boston, Massachusetts—Of the four tetracycline analogues, DECLOMYCIN Demethylchlortetracycline showed the longest sustained activity levels in the blood.

gonococcal infection. Marmell, M., and Prigot, A.,[4] New York, N. Y.—Of 63 cases of gonorrhea, 61 promptly responded after short courses of DECLOMYCIN. Therapeutic effect was found equal to that of intramuscular penicillin.

bronchopulmonary infection. Perry, D. M.; Hall, G. A., and Kirby, W. M. M.,[5] Seattle, Washington—Of 30 cases of acute bacterial pneumonia, all were afebrile following two to 10 days of treatment with DECLOMYCIN. Results were good in 21.... All of six patients with acute bronchitis responded promptly.

pediatric infection. Fujii, R.; Ichihashi, H.; Minamitani, M.; Konno, M., and Ishibashi, T.,[6] Tokyo, Japan—In 309 pediatric patients with various infections, DECLOMYCIN was effective in 75 per cent.

urogenital infection. Vineyard, J. P.; Hogan, J., and Sanford, J. P.,[7] Dallas, Texas—Clinical response in pyelonephritis correlated well with results of *in vitro* sensitivity tests, which showed some strains of *A. aerogenes*, Proteus and Pseudomonas more susceptible to DECLOMYCIN Demethylchlortetracycline than to its analogues.

pneumonia. Duke, C. J.; Katz, S., and Donohoe, R. F.,[8] Washington, D. C.—Results were satisfactory in all but two of 32 cases of acute bacterial pneumonia, of which only 11 were uncomplicated. No side effects were observed.

brucellosis. Chávez Max G.,[9] Mexico, D. F., Mexico—All of nine patients with *Br. melitensis* infection were afebrile after five days on DECLOMYCIN. Blood cultures were negative in all cases on the 20th day. Side effects were limited to slight temperature increases which abated in four days.

pustular dermatosis. Blau, S., and Kanof, N. B.,[10] New York, N. Y.—Results with DECLOMYCIN were excellent in both of two cases of impetigo, one of two cases of folliculitis, six of nine cases of furunculosis, all of three cases of acne rosacea and 26 of 45 cases of acne vulgaris. Overall, results were excellent or good in 85 per cent.

antibacterial spectrum. Finland, M.; Hirsch, H. A., and Kunin, C. M.,[11] Boston, Massachusetts—DECLOMYCIN Demethylchlortetracycline was found the most effective of the tetracycline analogues against two-thirds of 680 normally sensitive strains of 15 separate species.

the over-all picture. Combined results reported by 210 clinical investigators[12]—DECLOMYCIN produced a favorable response (cured or improved) in 87 per cent of 1,904 patients. Two-thirds of the patients received one capsule every six hours. Treatment was continued for as long as 180 days, but was between three and eight days in most. Side effects were seen in 9.9 per cent, but necessitated discontinuance of treatment in only 1.8 per cent.

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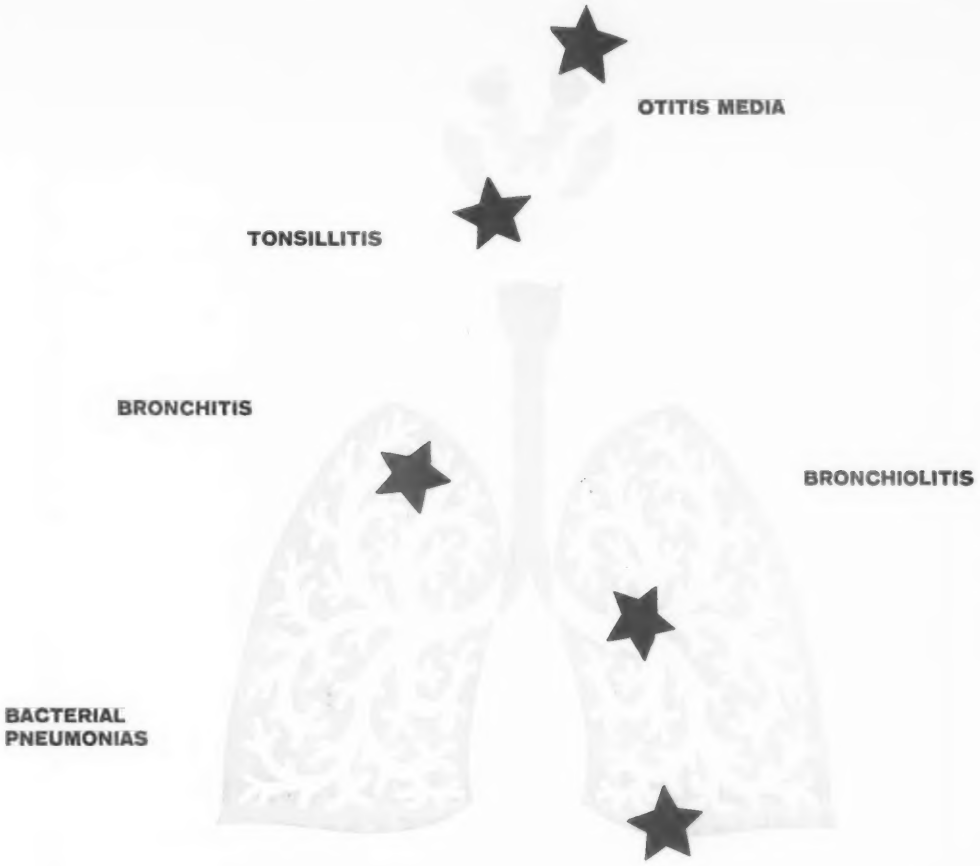

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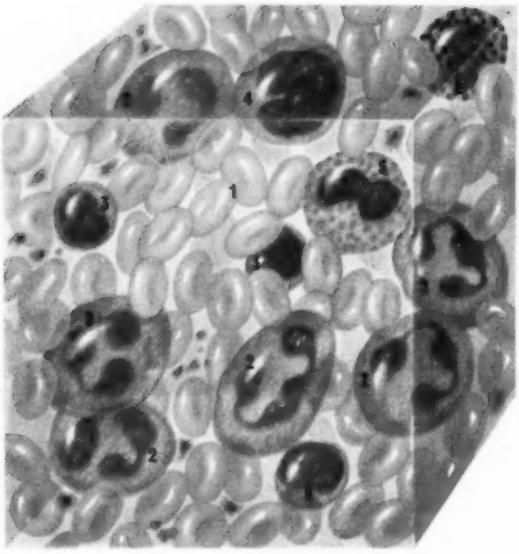

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References: (1) Antos, R. J.: Southwestern Med. 37:236-237 (April) 1956. (2) Turell, R.: A.M.A. Arch. Surg. 74:610-614 (April) 1957. (3) Dennison, A. D., Jr.: Am. J. Cardiol. 1:400-403 (March) 1958.

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